THE USE OF ARTIFICIAL INTELLIGENCE TO IMPROVE THE U.S. DEPARTMENT OF VETERANS AFFAIRS' CLAIMS PROCESSING SYSTEM

HEARING

BEFORE THE

SUBCOMMITTEE ON DISABILITY ASSISTANCE AND MEMORIAL AFFAIRS

OF THE

COMMITTEE ON VETERANS' AFFAIRS
U.S. HOUSE OF REPRESENTATIVES

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THE USE OF ARTIFICIAL INTELLIGENCE TO IMPROVE THE U.S. DEPARTMENT OF VETERANS AFFAIRS' CLAIMS PROCESSING SYSTEM

TUESDAY, JANUARY 29, 2008

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON VETERANS' AFFAIRS,
SUBCOMMITTEE ON DISABILITY ASSISTANCE AND MEMORIAL AFFAIRS,
WASHINGTON, DC.

The Subcommittee met, pursuant to notice, at 2:06 p.m., in Room 340, Cannon House Office Building, Hon. John J. Hall [Chairman of the Subcommittee] presiding.

Present: Representatives Hall, Lamborn, Bilirakis.

OPENING STATEMENT OF CHAIRMAN HALL

Mr. HALL. Good afternoon ladies and gentlemen. The Committee on Veterans' Affairs, Subcommittee Disability Assistance and Memorial Affairs, hearing on "The Use of Artificial Intelligence to Improve the U.S. Department of Veterans Affairs' (VA's) Claims Processing System" will come to order.

Before I begin with my opening statement, I would like to call attention to the fact that Raymond C. Kelley, National Legislative Director for AMVETS and Kerry Baker, Associate National Legislative Director for the Disabled American Veterans have asked to submit written statements for the hearing record.

If there is no objection, I ask unanimous consent that these statements be entered into the record.

Hearing no objection, so entered.

[The statements of Mr. Kelly and Mr. Baker appear on p. 80 and p. 82.]

I would ask that we all rise for the Pledge of Allegiance. The flag is in this corner of the room.

[Pledge of Allegiance.]

I would like, first of all, to thank the witnesses for coming today to appear before the Subcommittee. I know I speak for my colleagues when I say we are all extremely frustrated and disappointed when we hear about 650,000 claims pending and another 147,000 appeals with a delay of 183 days to process those claims.

But looking at this photograph, which is up on the screen right now, of an eight-inch paper record held together with rubber bands and marked with post-it notes, it is hard to imagine that things do

not get lost or missed. This has got to be cumbersome when processing our veterans' claims.

There is no doubt that we need a better system than rubber bands and post-it notes and must look beyond the current way VA is doing business. There are best practices within the scientific community and best practices in use in the private sector.

I thank you for joining me and the Subcommittee today to explore these solutions to broaden our understanding of what is possible, realistic, and achievable in this technological age.

The current VA claims process is paper intensive, complex to manage, difficult to understand, and takes years to learn. Training a rater can take 2–3 years and many leave within 5 years. Experienced raters can adjudicate about 3 claims a day, taking about 2–3 hours apiece.

This means that if there are 10 people who can rate a claim and 800 claims are ready to rate, then it will take another 80 days to process those pending claims, which have already been in the system for several months.

This is very labor intensive. And in the meantime, veterans are waiting months without compensation while their completed case sits on a shelf. I know the other Members of the Committee and most Americans find that unacceptable.

Additionally, there have been reports by the U.S. Government Accountability Office, the VA Inspector General, and the Institute for Defense Analyses that explored the variances in ratings between Regional Offices (ROs) and the lack of inter-rater reliability.

The Veterans' Disability Benefits Commission also found a great deal of subjectivity and inconsistency in the VA's disability claims process.

So how do we solve this?

I have had a lifelong interest in science, was a three-time National Science Foundation scholar, and a physics student while at Notre Dame. I learned FORTRAN when I was a kid when my father was teaching seminars when the computer would take up a room this size that now fits into a laptop.

So I find the topic of artificial intelligence, or AI, compelling since it requires the confluence of science, technology, mathematics, engineering, and physics.

In general, the purpose of AI is to make computer programs or machines that can solve problems and achieve goals. AI software increases speed, improves accuracy and reduces costs for many industries and agencies.

AI does not replace the human element, but rather facilitates its availability. There are many examples of AI in other areas, such as banking and medicine. For instance, the Veterans Health Administration (VHA) relies on VistA to help doctors with diagnosis and treatment. It sends alerts when a patient needs a flu shot, cholesterol screening, or warns of potential drug interactions.

AI can be a decision support tool for adjudicating claims too. It could be used to organize and store data. It could match key words from a veteran's record to the criteria in the Rating Schedule. It could prioritize multiple disability issues.

I envision a VA in which a veteran can apply online for benefits, upload records, exams, and other certificates, which are prioritized and classified by an expert system that can match the data to the Rating Schedule criteria and thereby shorten the time it takes to generate a claim.

The electronic template used by the examiner could be associated with the Rating Schedule, which could also help calculate ratings. Classifiers or key words could easily be matched by the computer to the Rating Schedule, such as "Arm," "Amputation," then "90 percent."

This would free up the time for the RO employers to deal with the more complicated issues, and assist veterans and their families with their problems.

This Subcommittee has often heard that veterans do not know about, or understand, their benefits and that transitioning servicemembers are not getting all of the support that they need from the Veterans Benefits Administration (VBA).

In this way, VBA staff could be providing more outreach and ensuring that veterans understand their entitlements and eligibility requirements for other programs, and benefits such as vocational rehabilitation, insurance and special monthly compensation.

I am eager to hear testimony today that will open up the discussion on information technology (IT) and share ideas that can improve rating efficiency, quality, and accuracy while reducing inconsistencies and variances in decisions for our disabled veterans who often have been waiting for a long time for a claim determination.

I look forward to working with Ranking Member Lamborn and the Members of this Subcommittee in finding real solutions that

will vastly improve the VA claims process. It is unconscionable that our veterans are waiting as long as they are for their earned benefits. And this situation must end.

I now recognize the distinguished Mr. Lamborn for any opening remarks he may have.

[The prepared statement of Chairman Hall appears on p. 44.]

OPENING STATEMENT OF HON. DOUG LAMBORN

Mr. LAMBORN. Thank you, Mr. Chairman for yielding. I would like to welcome all of our witnesses to this Subcommittee's first hearing of the Second Session.

I want to commend you, Mr. Chairman, for your leadership and bipartisanship in the previous session. And I look forward to working with you and your staff to find meaningful solutions to improving the VBA claims processing system and reducing VBA's disability claims backlog.

I am excited that our topic of discussion today is the Use of Artificial Intelligence to Improve the Disability Claims Process.

As you know, Mr. Chairman, this is an idea that my colleagues and I on this side of the aisle have long supported.

Whether it was in our fiscal year 2008 views and estimates, or two bills that I introduced last session, H.R. 1864 and H.R. 3047, we believe that one way to truly reduce the current backlog and prevent future backlogs is to propel the VA beyond a 20th century, paper-based processing system, as you so eloquently showed us through a picture on the screen.

VA must create a system where all claims are electronically scanned and rating board members have access to computerized interactive tools to assist them in the adjudicative process.

Hopefully, the new system will lead to more accurate rating decisions that are delivered to our Nation's veterans in a timely manner.

While I envision an important role for artificial intelligence in the decisionmaking process, I also concur with our witnesses who will attest that this technology should not and will not ever completely replace claims adjudicators.

A few weeks ago, staff from both sides of the aisle attended a briefing where VBA laid out plans to move forward with such a system. And I am excited to learn more about those plans today.

The Subcommittee must ensure that this new initiative is fully funded and completed with the speed and attentiveness that our veterans deserve.

I am glad that we have representatives from both the private and academic sectors here with us today. It is my hope that they will be able to help VA develop some of the options that are currently available in the private sector.

While I understand that VA has a very large and unique disability claims system, there are similar systems out there. And I would hope that VA would look at these systems before they reinvent the wheel.

We must improve this system so heroes like Gunnery Sergeant Cleveland do not have to wait several years to have their claim adjudicated correctly.

Mr. Chairman, I extend my thanks to you and your staff for holding this hearing this afternoon. And I look forward to hearing the testimony of our witnesses. I yield back the balance of my time.

[The prepared statement of Congressman Lamborn appears on p. 45.]

Mr. HALL. Thank you, Congressman Lamborn.

Joining us on our first panel is Tai Cleveland from Dumfries, Virginia. Mr. Cleveland is a medically-retired Marine who sustained a devastating training injury in Kuwait in 2003. With him is his wife, Robin.

And they are joined by John Roberts, the National Service Director for Wounded Warrior Project (WWP), which is the veterans service organization (VSO) that represents the Clevelands. I would also like to recognize Mr. Roberts' distinguished service as a Marine who was also severely injured while serving this Nation in Somalia. I thank you all for being here.

I would like to remind our panelists that your complete written statements have been made a part of the hearing record.

Therefore, if you would, try to limit your remarks to 5 minutes so that we have sufficient time for follow-up questions.

Mr. Cleveland, we will go ahead and begin with your testimony. You are now recognized, sir.

STATEMENTS OF GUNNERY SERGEANT TAI CLEVELAND, USMC (RET.), DUMFRIES, VA (DISABLED VETERAN); ACCOMPANIED BY ROBIN CLEVELAND, DUMFRIES, VA; AND JOHN ROBERTS, NATIONAL SERVICE DIRECTOR, WOUNDED WARRIOR PROJECT

STATEMENT OF GUNNERY SERGEANT TAI CLEVELAND, USMC (RET.)

Mr. CLEVELAND. Mr. Chairman, Ranking Member Lamborn, distinguished Members of the Committee, thank you for the opportunity to testify before you regarding my experience with the Department of Veterans Affairs and claims process. My name is Gunnery Sergeant Tai Cleveland, United States Marine Corps Retired. With me today I have my wife, Robin. And I would like, with your permission, Mr. Chairman, for my wife, who has dealt often with the VA on our benefits claim, to discuss the issues.

Mr. HALL. Thank you, sir. And, Robin, you are now recognized for 5 minutes.

Mrs. CLEVELAND. Thank you, Mr. Chairman. My husband served his country proudly for 24 years as a United States Marine. And although we had many issues with the U.S. Department of Defense (DoD) following his injuries, due to the subject of this hearing, I will limit my comments to our difficulties with the VA claims processing system and its impact on our family. As I am speaking, however, please keep in mind that a severely injured servicemember must navigate multiple systems: the Department of Defense, the Social Security Administration, Medicare, and the VA. It is quite overwhelming to say the least.

Tai was injured in August 2003 during a hand-to-hand combat training accident in Kuwait, where he was flipped onto his back, injuring his head and multiple vertebras. The resulting damage

has left my husband a paraplegic with chronic neuropathic pain, spasticity, and what is classified as a mild-to-moderate traumatic brain injury that has its own set of challenges.

Since Tai's injury, I have had to learn the hard way how to navigate the systems. Keeping meticulous records of documents, recording dates and times of telephone calls, confirming receipt of anything sent or hand delivered to Federal agencies.

As such, I thought the best way to convey our situation was to share a timeline detailing our experiences with the VA.

In June 2005, we attended the Transition Assistance Program class provided by the Marine Corps and the VA to learn about the available options. We completed the VA's Benefits Delivery at Discharge (BDD) process, including the benefits, specially adaptive housing, and adaptive vehicle program applications, and hand delivered it with medical records, MRI compact discs, films, prescription reports, et cetera, in its totality to 1722 Eye Street, Washington, DC.

After having completed his compensation and pension exam, we called the VA Benefits number in November of 2005 where we were advised that the application was incomplete and medical records from the military treatment facility (MTF) were needed. I delivered a second copy of MTF medical records to the DC Office.

A month later, I phoned again to see if the records were received and was advised that no application was on file. I copied and redelivered the original application to the DC Office.

In January 2006, another call to VA Benefits advised me that the claim was being reviewed, but that medical records were required to make a final determination.

I again copied medical records and redelivered to the DC Office. I was later told that the housing and vehicle grant were denied.

When I called in February of 2006, I was told no determination could be made because Tai was still on active duty. Additionally, I was told that no claim was on file for the housing or vehicle. We reapplied.

In March 2006, I met with a VA employee at Walter Reed regarding benefits and our difficulty with the claims. She introduced us to a VA social worker at Walter Reed who enrolled Tai in the Adaptive Driving Program at Richmond.

We were told to reapply for benefits, because no application was found. We resubmitted the original application and completed a new application for Specially Adaptive Housing, Home Improvement and Structural Alteration (HISA), and the vehicle grant, but were informed on April 5th that the applications were denied and advised to reapply.

In June 2006, we were informed by the VA social worker that the approval for the vehicle application was in fact received. But she was "unable to locate the application, because the clerk failed to separate the application and maintain an in-house copy."

In addition, our HISA and Adaptive Housing Grants were denied. We reapplied.

Everything was quiet for the next 3 months until October 26, 2006, when we were advised to reapply for vehicle and housing grants since no official notification of approval was received.

Again, in November of 2006, we received verbal notification from the VA representative at Walter Reed of the latest vehicle and housing denial. And on December 13th, 2006, we were advised to reapply for vehicle and housing grants, and were contacted by VA to verify our address.

In January of 2007, Tai was medically retired from the Marine Corps. After filing BDD, we assumed we would get his disability check within a month or so.

In February of 2007, our housing and vehicle grants were approved and supposedly had been approved since April of 2006. But the hard copy was no longer on file. To date, we still have not received the official vehicle approval.

In late May 2007, we received verbal notification from the VSO, helping us at the time, that the VA was indicating that there was not enough information on file to rate the claim. And, therefore, additional information was necessary.

In June, we received notification from the VA of an 80 percent partial rating. We were advised that the rating was temporary and additional information was necessary in order to process the claim.

As we were scheduled to be in Richmond shortly to obtain an adaptive cycle, we were advised to have Richmond perform the necessary evaluations for submittal to the Roanoke Regional Office.

While at Richmond, I also inquired about obtaining the vehicle grant hard copy and contacted the VA to inquire about Aid and Attendance. I was told that I was not eligible.

In July 2007, via express mail, Tai's medical records from Richmond to Roanoke—I delivered Tai's records from Richmond to Roanoke and sent the VA an email advising that we still had not received a disability check approximately 6 months post-discharge.

In August, I phoned and emailed VA Benefits again and told them that despite the temporary rating, we still had no check. I requested direct deposit information and requested to verify our address.

After having been contacted about our problems by a non-profit organization, a concerned representative from the VA's Central Office called in September about the outstanding checks. And we were told that a tracer would have to be placed on the missing checks before replacements could be mailed. I later received a call from the Roanoke office and was advised that replacement checks were going to be issued.

On October 4th, 2007, a VA representative told us that the claim was being expedited and should be completed by the 14th. We were informed on the 14th and on the 30th that the updated medical reports still had not been received. However, on the 29th we began to receive the replacement checks for the temporary rating.

At this point in the timeline, it is important to note that our family had now been without our full disability compensation and benefits for almost 11 months. Our college-aged children were forced to withdraw. The overall financial strain, and frustration level, and emotional toll, in addition to the actual injury, were crushing.

Finally, on January 7th, 2008, after the intervention of Mr. Hall's Subcommittee and the Wounded Warrior Project, we received a final rating and back payment totaling thousands of dollars.

As you can see we filed and re-filed, submitted and resubmitted medical records, claims forms, applications, and so on. But no one seemed to be able to track anything, placing additional burdens on an already overwhelmed family. In our case, after the intervention of a Congressional office and a non-profit organization, we were able to get the benefits Tai has earned. This process should not be that hard.

Today, almost 4 years later, while we still have a few things to resolve with our ratings and benefits, our family is trying to move on.

Many people have stepped in to help us, from government agencies, to Congressional offices, to non-profit organizations. I am planning to return to work and school. Our children are returning to school. And Tai is enrolled in a media careers program for veterans in Chairman Filner's district. He has been a noted leader in the program, and ever the Gunny, and has even spoken to the Wounded Warrior Project about being a peer mentor.

However, our purpose in coming here today is not only to tell you our story, but also to let you know that we are not alone. People we know have had similar problems. And we know there are more out there.

We are hoping that our presence here will help you understand the obstacles faced by wounded members and their families and inspire everyone involved to work together to improve the efficiency of this vital system for the benefit of those who sacrificed so much for this country.

Thank you, and I look forward to any questions you may have.

[The prepared statement of Gunnery Sergeant Cleveland appears on p. 45.]

Mr. HALL. Thank you, Mrs. Cleveland, and thank you so much Gunnery Sergeant Cleveland for your testimony. And—If your case was expedited, I would hate to see one that was not expedited.

Now we recognize John Roberts from the Wounded Warrior Project. Mr. Roberts, you are recognized for 5 minutes.

STATEMENT OF JOHN ROBERTS

Mr. ROBERTS. Mr. Chairman, Ranking Member Lamborn, distinguished Members of the Subcommittee, thank you for the opportunity to testify before you today regarding the use of technology to improve the efficiency of the Department of Veterans Affairs' claims process.

My name is John Roberts. And I am the National Service Director for the Wounded Warrior Project, a non-profit, non-partisan organization dedicated to assisting the men and women of the United States Armed Forces who have been injured during the current conflicts around the world.

As a result of our direct, daily contact with these wounded warriors, we have a unique perspective on their needs and the obstacles they face as they attempt to transition and reintegrate into their communities.

In addition to my experience with the Wounded Warrior Project in general and the Clevelands' case specifically, I am a service-connected veteran, a former veteran service officer, and most recently a supervisor with the Houston VA Regional Office where I had the

opportunity to review claims and became familiar with a number of significant deficiencies within the system.

In order to fully appreciate the problem, it is important to understand how the systems currently operate. Despite recent advances in technology common to most businesses, the Veterans Benefits Administration claims processing system is still dependent on a paper system. Although the VBA can now view electronic health records transmitted from the Veterans Health Administration, the ratings team is still required to print the records, place them in the veteran's claim folder, which are then reviewed page by page by a Veteran or a Rating Veteran Service Representative (RVSR).

The current model of the VBA claims processing system has a total of six separate teams and often, but not always, includes another team that is dedicated to the processing of the Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) cases.

The six main teams are, of course, triage, which handles the incoming claims, evidence, and is charged with maintaining the outdated file cabinet system, which stores the hard copy paper claims files.

Predetermination, is charged with the initial development of all claims for Service-connected disabilities.

The rating team is responsible for reviewing all available evidence and determining if the disabilities are service related. If so, they also assign the disability percentage.

The post-determination team is responsible for inputting awards and generating notification letters to the claimants.

The appeals team maintains all pending appeals submitted by all claimants.

And the public contact team is charged with the general phone calls, questions, and conducting one-on-one interviews with the veterans, dependents, and survivors.

Files must be hand carried to each of the teams. And any member of these teams has access to the records at any given time.

Despite the number of people with access and the ease with which files may be misplaced, VBA only has one way to locate the files once it is removed from the filing cabinet.

An electronic system called COVERS, but this system is only effective if utilized by the individual employee. Rather than having access to the file through electronic means, COVERS requires manual input to identify a specific location or individual. If this is not done, it is very time consuming to locate one file among all the files that are within the processing system.

I'll give you an example. Within the Houston Regional Office, there are approximately 200 employees. And each of these employees could have up to 30 or more files at his or her desk at any time.

Another challenge is the outdated filing system, which is used to store thousands of active files warehoused either at or near Regional Offices. If a file clerk or an employee for that matter is not paying attention and misfiles a claim folder into the wrong cabinet or drawer, it then becomes a very time consuming and difficult task to check each and every drawer to locate the missing file.

The Triage Team at each RO is responsible for the intake of all new claims and evidence submitted by each and every claimant. If

the file is not easily located, the mail is placed on search within the COVERS system until the file can be located.

Because there are so many teams within the claims processing system, a particular file could be located within teams at any given time. This allows for—this allows for the human error factor, which is often why the numerous pieces of vital evidence are often lost or misplaced and cannot be associated with the appropriate claim folder.

If a file cannot be located and all avenues have been exhausted to locate the file, the Regional Office will take action to rebuild the folder from scratch. This means that all prior evidence, claims, and claims which are submitted by the claimant are then lost. The responsibility to replace the missing evidence or claims is placed on the claimant. The VA will ask the claimant to submit any copies that he or she may have in their possession.

In addition, due to the current war on terrorism, VBA is faced with another challenge. The new challenge is trying to obtain records from the National Guard and Reserve units. Active duty forces obviously do not file a claim until released from service. Once demobilized, a Reserve member or National Guard component is eligible to file such a claim. If reactivated, however, the Reservist's claim is halted and he or she at that time will take their service medical records with them into theater.

There is also the large backlog of records requests to the Records Management Center, which houses not only claim folders, but now receives all servicemember records for recently discharged servicemen. Think of this as a large warehouse of nothing but paper files and an inadequate staff to locate each and every file or record that has been requested by Regional Offices across the country.

Another significant issue, which can be identified at every Regional Office around the country, is the varying levels of experience of the Rating Veterans Service Representative. In any given case, you could take five individual RVSRs and give them the same file and come up with five different opinions on how the case should be rated.

Although there have been improvements with the implementation of Rating Board Automation (RBA) 2000, the current electronic system utilized to rate compensation claims, the system is far from perfect. The overall ratings decision, including the service connection and actual percentage, is left up to the interpretation of the individual RVSR.

The gap in varying decisions nationwide can also be attributed to the local policy at each individual Regional Office. While this has been the case for many years, the issue has come to a head due to the increased frequency at which this generation of veterans speak to each other and compare their individual situations.

Mr. Chairman, unfortunately, there are—these are only a few of the issues that surround a paper-based system. And situations like the Clevelands' are not unique. Many working groups, Government Accountability Office reports, and commissions have made recommendations on this topic.

Most recently, the Veterans' Disability Benefits Commission suggested that cycle times and accuracy could be improved by "establishing a simplified and expedited process for well-documented

claims, using best business practices and maximum feasible use of the information technology."

While the availability of well-trained, customer-service-minded employees cannot be overvalued, the implementation and recommendations such as these can help to greatly reduce the complexity of the claims processing system and result in a timely—result in timely results.

WWP looks forward to working with you and the VA to try to resolve these problems. Thank you again for the opportunity to testify today. And I will be happy to answer any questions you may have.

[The prepared statement of Mr. Roberts appears on p. 47.]

Mr. HALL. Mr. Roberts, thank you very much for your service to our country, the Marines, VA, and also now with the Wounded Warrior Project.

And, I would start, I guess by asking Sergeant and Mrs. Cleveland what would you say were the biggest missteps in where the VA communicated with you?

Mrs. CLEVELAND. That is just it—the lack of communication.

Mr. HALL. Okay. It is just a simple answer.

Mrs. CLEVELAND. Right. What happens is you just get a general form letter that says "your file is incomplete" or "medical records are necessary."

But then when you contact someone or you finally are able to get someone on the phone, they have no idea what it is that you are talking about. And it becomes submit or resubmit the entire package.

Mr. HALL. So you were initiating most of the communications?

Mrs. CLEVELAND. Exactly.

Mr. HALL. Is this your file, by the way, on the table?

Mrs. CLEVELAND. This is a part of it.

Mr. HALL. It is——

Mrs. CLEVELAND. This is a snapshot of it. And I was in the process. And I had it in one-inch binders is what it started out in. And it has grown quite a bit.

Mr. HALL. The average we hear today is 183 days to process a claim. And that is hard enough to imagine. But in your case, it sounds like it went closer to 365 days.

Mrs. CLEVELAND. Probably a little bit further than that, because we initially applied while he was still on active duty. July 2005 was when his application went in, the BDD.

Mr. HALL. Well, somebody from this government ought to apologize to you. So let me be the first—if nobody else has, I apologize to you both on behalf of your government that you weren't taken care of and your needs were not attended to more quickly.

Mrs. CLEVELAND. Thank you.

Mr. TAI CLEVELAND. Thank you.

Mr. HALL. I am sorry that happened. And we are going to try to make sure that it does not happen to future veterans anymore. I am going to try to reduce the time and reduce the number of repetitive requests, and stop making our veterans jump through hoops and prove that something is service related when it obviously is, and try to get people like you back integrated into something ap-

proaching normalcy and going about their lives in a much quicker way.

My understanding was it took a full year for the VA to get you a check. And that was even after you underwent the BDD process.

Mrs. CLEVELAND. Correct.

Mr. HALL. What would have helped make this a better process, other than better communication? What would you list as the things that would have made it a better process for you?

Mrs. CLEVELAND. If the process were fully automated, that would make a huge difference, because then you would not have to venture out on this paper chase.

Mr. HALL. Right.

Mrs. CLEVELAND. From my understanding, the file moves from one person to the next person in the rating process. And if one piece of paper ends up missing, the next person, it is something that they need, they don't—it is not as simple as going back and saying, excuse me, you just gave me this record. And—page 20 is missing. Can you locate it?

Mr. HALL. Yeah.

Mrs. CLEVELAND. It becomes the claimant's, the veteran's job to get that page 20 in there. Only they don't know it is page 20, so it becomes resubmit.

Mr. HALL. Thank you very much.

Mrs. CLEVELAND. The automation.

Mr. HALL. Let me just ask Mr. Roberts, as a former Regional Office supervisor, could you describe for us how you would change this system to make it more effective and efficient for veterans?

Mr. ROBERTS. Well in the Clevelands' case specifically, the VA historically, until the War on Terrorism started, they didn't—they were not used to taking active duty servicemembers, and taking claims while they were still on active duty, and establishing a claims folder.

In their case, I would imagine that because he was on active duty, a claim folder was not established. Papers that were submitted, claims that were submitted, were not tracked in any way, shape, or form, and misplaced, lost. And that is why they were resubmitting over and over.

The current claims processing system right now that—Mrs. Cleveland is absolutely right. It goes from one hand to another, from one team to another. And if the veteran has an appeal pending, then it could be in any team within the Regional Office at any given time.

Definitely having the electronic file back and forth with DoD and VA would be the most beneficial system.

Mr. HALL. Do you believe it is really necessary for six teams to handle one case?

Mr. ROBERTS. No. This is—CPI was put into place several years ago. They used to have a team concept where files were rated. Everything was done within the same team. And the file stayed within that team.

The way they have it set up now, everybody is doing part of the assembly line process. And they have their own specific part. And then it is passed on to the next person to do theirs. So it was a little bit easier years ago to do the claim, because you have RVSRs.

You had decision review officers. You had veteran service representatives. You had all the components to work the claim right there on one team.

Now responsibility gets passed along to whoever takes over after they get done with their part. And they pass it on to someone else. So it is hard to track.

Mr. HALL. Thank you, sir. My time has run out. So I just want to ask very quickly—You mentioned that you can have more than one RVSR rating a case. Five different ones that come up with five different opinions——

Mr. ROBERTS. Right.

Mr. HALL [continuing]. Can VETSNET fix that problem?

Mr. ROBERTS. VETSNET has come out. And they are working in it. Before I left the VA, it was just getting rolled out and being utilized. It doesn't fix it.

And it is still the interpretation portion that the RVSR actually does on their own. They look at it. They make a judgment call based on the medical evidence. And based on their background, their experience, they make their decision. So it is still flawed in the current way it is rolled out.

Mr. HALL. Thank you, sir. Now I will turn to our Ranking Member, Mr. Lamborn, for 5 minutes.

Mr. LAMBORN. I thank you, Mr. Chairman. Ms. Cleveland—Mrs. Cleveland, you mentioned that there are some unresolved issues. And the Chairman may have asked you briefly about that.

Is there still anything as we sit here that needs to be resolved that we can help you with? Briefly; if not, we might have to talk separately or if you haven't already talked.

Mrs. CLEVELAND. Separately.

Mr. LAMBORN. Okay.

Mrs. CLEVELAND. Thank you.

Mr. LAMBORN. Okay, okay. Thank you.

Mr. Roberts, do you believe that several of the problems that you laid out in your testimony to date could be solved with the new and up-to-date system, electronic system, that uses some form of artificial intelligence to adjudicate the claims?

Mr. ROBERTS. Honestly, sir, I am just not that familiar with it. I wouldn't even want to get involved with that. And I will leave that up to the experts.

Mr. LAMBORN. Okay. Well, thank you for your candidness there.

Why does the VA have a policy to place the responsibility to replace a lost file on the claimant?

Mr. ROBERTS. Well, once the file is lost, they have no other option. And they are hoping that the claimants themselves have copies, like the Clevelands, in their possession. And they can resubmit and kind of rebuild the folder from the ground up again.

You have to remember when the file is lost and they have to go through this process, they lose all service medical records, DD–214's, the initial claims, any medical evidence submitted from private physicians or medical facilities. Everything is gone. They have to start completely from scratch and rebuild the file from the ground up.

Mr. LAMBORN. Okay. And you said in your testimony that numerous pieces of vital evidence are often lost or misplaced and can-

not be associated with the appropriate claim folder. Could you give us a little more specificity on how often you think this happens?

Mr. ROBERTS. Well, I imagine—and just for an example, I used to use Houston, because I worked there. If the claim file is not where it is supposed to be, if it is not in the filing cabinet, or it is not at the person's desk that says it is actually located with, the mail is just put on search. And it is put in a bin in numerical order. And it sits there until somebody COVERS in a file to themselves and sees, you know, mail search pop up. And then they physically have to go get up and go get the mail and then associate it with the file. If they don't use the system, they never know the mail is there.

I have seen files go all the way through the processing system, be adjudicated, be rated, be finalized, letter has gone out to the veteran, the file goes back, gets covered into the filing cabinet, and the little GS–4 file clerk goes, "Oh, there is mail for it." And the process starts all over again. They have to go back and re-adjudicate and re-rate that claim based on the new evidence.

The system they have now is the human error. If they don't use it, it doesn't do you any good.

Mr. LAMBORN. Now it sounds like some of the issues we are talking about right this minute, and in response to earlier questions from the Chairman, and based on the testimony from the witnesses, has to do not so much with artificial intelligence or how the claims are adjudicated, but how the records are stored, and kept, and processed, and transferred.

So at a minimum, it sounds like we should be looking at digitizing some of these records to hopefully reduce the examples where things are lost and the time is lost trying to retrieve them, if that can be done. Or multiple people can look at them at the same time, if we have these six teams, more than one of which might be looking at it at the same time.

Do you think that is a step that the VA, at a minimum, should take?

Mr. ROBERTS. I think that is exactly what they should be doing. I have seen—this is a small example of files I have seen. I have seen two or three boxes just for one file, one veteran, in large boxes. And I have seen boxes get lost that belong with other boxes.

So I got—I have seen files from veterans filed—half of the file in one side of the building and the other half of the file on another side of the building. And it takes—I have seen up to a month for them to actually connect the two of them together.

So, yeah, I have actually seen people on the appeals team working a claim with half a file. And people in predetermination working on half a file. And I am not sure how they did it. But I have seen it.

Mr. LAMBORN. I thank you for your testimony. Mr. Chairman, I yield back.

Mr. HALL. Thank you, Mr. Lamborn. It would be funny were it not so serious. The Chair will now recognize Congressman Bilirakis for 5 minutes of questioning.

Mr. BILIRAKIS. Thank you, Mr. Chairman. My question has already been answered.

But I appreciate you holding this hearing. And we need to solve this once and for all, because I know it has been going on a long time. And the claims—the process is too long.

Thank you very much for testifying today. And thank you for your service.

Mr. HALL. I would add my thanks to all of you, and just say that, Mr. Roberts, the help that the Wounded Warrior Project provided and you provided is very welcome I'm sure to the Clevelands but also to all of us.

And, just knowing that this is not an isolated incident, I hope that we can set up a system using as much digitizing, electronic storage, and electronic motion, and shared files, as the Ranking Member was saying, so that we can avoid this; what looks like it is well over a foot high. If you piled those on top of each other, a foot high, for what you are saying is a relatively small case in terms of the amount of information.

But at any rate, thank you for your testimony.

And we have votes that are under way now. So we will recess the hearing for as long as it takes for us to go across the street and vote. When we come back, we will hear from our second panel.

This Committee stands at recess until then.

[Recess.]

Mr. HALL. The Subcommittee will come to order. Thank you for your patience. We now have joining us at the witness table panel two.

Dr. Tom Mitchell, Chairman of the Machine Learning Department, School of Computer Science at Carnegie Mellon University; Dr. Randolph Miller, Chairman of the Department of Biomedical Informatics at Vanderbilt University School of Medicine; Dr. Marjie Shahani, Senior Vice President of Operations at QTC Management, Inc.; Mr. Ned Hunter, Chief Executive Officer from the Stratizon or is it Stratizon?

Mr. HUNTER. Stratizon.

Mr. HALL. I am thinking of that other company that ends with "izon" Corporation, to describe a pilot study in Virginia. Mr. John F. McGarry, Senior Vice President of Benefits and Chief Risk Officer at Unum; and Mr. Gary Christopherson, the former Veterans Health Administration Chief Information Officer, former Senior Advisor to the Under Secretary for Health, and former Principal Deputy Assistant Secretary for Health Affairs. A distinguished group indeed. Ladies and gentlemen, welcome to this Subcommittee. Your full written statements have been entered into the record. And so feel free to cut corners if you wish so that we will have time for questions.

We are expecting to have Ranking Member Lamborn back here any time. But since the next round of votes is scheduled in about 40 minutes, we are going to try to move this along so we can hear from you and not interrupt the panel to have to go vote.

Mr. Mitchell, you are now recognized for 5 minutes.

STATEMENTS OF TOM M. MITCHELL, PH.D., E. FREDKIN PROFESSOR AND CHAIR, MACHINE LEARNING DEPARTMENT, SCHOOL OF COMPUTER SCIENCE, CARNEGIE MELLON UNIVERSITY, PITTSBURGH, PA; RANDOLPH A. MILLER, M.D., DONALD A.B. AND MARY M. LINDBERG UNIVERSITY PROFESSOR OF BIOMEDICAL INFORMATICS, MEDICINE, AND NURSING, VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, NASHVILLE, TN; MARJIE SHAHANI, M.D., SENIOR VICE PRESIDENT, OPERATIONS, QTC MANAGEMENT, INC., DIAMOND BAR, CA; NED M. HUNTER, PRESIDENT AND CHIEF EXECUTIVE OFFICER, STRATIZON CORPORATION, ATLANTA, GA (VA STATE PILOT STUDY); JOHN F. MCGARRY, SENIOR VICE PRESIDENT OF BENEFITS, CHIEF RISK OFFICER, UNUM, PORTLAND, ME; AND GARY A. CHRISTOPHERSON, UNIVERSITY PARK, MD (FORMER SENIOR ADVISOR TO THE UNDER SECRETARY FOR HEALTH, AND CHIEF INFORMATION OFFICER, VETERANS HEALTH ADMINISTRATION, U.S. DEPARTMENT OF VETERANS AFFAIRS, AND FORMER PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR HEALTH AFFAIRS, U.S. DEPARTMENT OF DEFENSE)

STATEMENT OF TOM M. MITCHELL, PH.D.

Dr. MITCHELL. Thank you Chairman Hall and distinguished Members of the Committee.

It is an honor for me to be asked to testify here today, and to try to help you help the members of our armed services who have served.

Clearly, we face a significant problem and backlog in the processing of benefits claims by the VA. In my opinion, we have the technology needed to address and to eliminate this problem. Think for a moment of the forms filling problem that we are all familiar with, filling out forms for income taxes.

If we can develop computer software like TurboTax, which helps us fill out very complex multiple page forms, guides us through the steps to determine what kind of information to put in which kind of field, and then can instantly apply very complex tax regulation codes to calculate to the penny the amount of income tax that we owe, then I don't see why we can't develop software that performs an analogous function for the people who have to fill out forms for VA benefits and the people who have to apply the complex regulations to those.

To take a second example that is even more similar to the problem faced by the VA, consider the current practices for processing benefits claims in the medical insurance industry.

At Highmark Inc., which is a major provider of health insurance in my home State of Pennsylvania, I am told that 90 percent, nine zero percent, of the claims that come in from physician offices and from hospitals are automatically processed without any human intervention.

How do they do this? They do it by using electronic forms instead of paper. They do it by coding the treatments that the patients have received using industry standard (International Statistical Classification of Diseases and Related Health Problems) ICD–9 codes. They do it by developing rule-based software that captures

the rules and regulations by which the correct payment is calculated from the details of the treatment received by the patient.

And after the decision is made automatically by the software, the payment is issued automatically. So that process happens in 90 percent of the cases automatically. And the other cases require human intervention.

Can the VA do the same? While the type of benefits claims processed by the VA may be somewhat different from those in the medical insurance industry, it seems to me the problems are similar enough that we ought to expect that the VA can also get a great benefit out of this kind of automation.

In my opinion, it is useful to consider a three-stage introduction of computer technology for claims processing in the VA. First, we can shift from pencil and paper claims to online claims. This alone would improve the accuracy, efficiency, and as we heard in the previous panel, the ability to hold onto and not lose claims.

Second, introducing computer software to help interpret these online claims to apply the regulations about which benefits are due would be a second step. We have well understood technologies for encoding complex regulations in software such as rule-based systems.

And for steps that require some human subjective judgment along the way, we also have technologies such as case-based reasoning, which allow the computer to pull up the two or three most similar previous claims in the system for inspection by the human as they are applying their judgment to this new case.

As the third step, once these claims are online and the processing is automated, the resulting database of claims can itself serve as a resource for data mining. Data mining methods can be applied to the claims data.

For example, data mining can be used to predict and flag new claims that are outliers that might require some specialized expertise to evaluate them, or to identify soldiers, veterans, who should be taking advantage of services that they appear not to and alerting them.

So to summarize, in applications from insurance claims processing to tax filing to customer help centers, there is a growing and widespread use of computer-based tools for capturing data in forms and for applying automatic rule-based inference to those.

Much of this technology comes out of research previously sponsored by Federal agencies such as the National Science Foundation and Defense Advanced Research Projects Agency. But the core technology is by now very well understood. This is not bleeding-edge technology.

The VA should take advantage of this. And I recommend three steps that can be carried on in parallel to get started.

One, conduct a detailed 3-month study of the workflow process in the benefits office to determine the different steps and to identify for each of those steps whether it can be automated. If not, whether some computer support such as case-based reasoning can be used to help in the human judgment.

Second, begin immediately to move all of the claims online. Even without any additional processing, just having them online will be a benefit.

And third, consult with large insurance companies and others who process benefits claims more automatically to understand what are the current best practices and to begin a process of adopting those where appropriate.

Thank you, Mr. Chairman, for your attention and for the opportunity to address the Committee.

[The prepared statement of Dr. Mitchell appears on p. 49.]

Mr. HALL. Thank you, Dr. Mitchell.

Dr. Miller, you are now recognized for your opening statement.

STATEMENT OF RANDOLPH A. MILLER, M.D.

Dr. MILLER. Thank you, Mr. Chairman, for the opportunity to address the Subcommittee this afternoon.

My comments describe the applicability of biomedical informatics to the processes determining veterans' eligibility for disability compensation.

Clinical informatics involves application of computer-assisted technology for information management and decisionmaking during healthcare delivery.

If I could have my slide over here. Don't worry, I am not going to read the whole slide. So the problem we have at hand is first the criteria in CFR 38 part 4 are vague and ambiguous. For example, in section 56, part C, muscle disability is defined as "loss of power, weakness, lower threshold of fatigue, and fatigue pain."

While I can't do as many push ups as I did when I was 20, I can't run the mile like I used to, and they talk on Sundays in the NFL broadcast about the athletes working through the pain of fatigue, I do not consider myself or pro athletes disabled. And so the criteria are very ambiguous.

So the first thing is for Congress to redefine what they really mean in a way that is actionable. Otherwise, computers won't be able to help.

Another key principle of informatics is that you need to identify the most proper, correct, definitive source of information, collect information from that source, once and only once, and record it once in a place where everybody else can access it without overriding it with incorrect information.

So in addition to the veteran himself or herself, there are three places of major activity relative to disability determination. During active duty, when somebody is injured or wounded, they should collect disability information right there—beginning at the time that the service man or woman receives care, and collect it in a way that is relevant to disability claims, so that doesn't have to be replicated later.

After discharge, the veterans are seen within the VA healthcare system, and they should collect disability information there. The Compensation and Pension Record Interchange (CAPRI) system is the beginning of a good way to do that. But it is only used on about 25 percent of disability examinations now.

And then finally, as we have already seen in the previous panel, there is more than ample opportunity to automate the paper records system for VBA.

And in my written statement, I presented three different layers, starting with simple collecting of information to more complicated

things like AI applications that can be used to progressively refine the system.

And I would also like to point out, as Dr. Mitchell stated, that once all of this information is automated, not just in scanned records but in actionable form, then you can collect information about which claims are more difficult to process or take longer time, which Regional Offices are efficient and not, which veterans need more attention because they haven't been processed yet, and so on.

When everything is electronic, you can do quality improvement much more effectively than you can with paper.

As I have stated, and the Chairman pointed out in his opening comments, artificial intelligence and expert systems cannot replace human intelligence and human compassion in judging whether veterans qualify for disability benefits. But they can speed up the process and help the VBA make it more uniform and more accurate.

It is very important to realize that you can cause problems by automating things as well as curing problems. So, for example, if in the process of implementing improvements the VBA raters had a half electronic system and half paper system, they would never know whether information was in the paper side or the electronic side. And they would have to go to both all of the time.

So this needs to be done in a thoughtful way, where people are helped at each step and the situation is not made more chaotic or confusing. And it needs to be done in a nondisruptive manner.

The way the VA has implemented the VistA system is exemplary nationally in informatics. And that would be a good basis on which to model future changes. Thank you.

[The prepared statement of Dr. Miller appears on p. 53.]

Mr. HALL. Thank you, Dr. Miller.

Dr. Shahani, you are now recognized for 5 minutes.

STATEMENT OF MARJIE SHAHANI, M.D.

Dr. SHAHANI. Mr. Chairman, Members of the Subcommittee, thank you for the opportunity to testify before you today on the important topic of processing veterans' claims.

QTC is a nationwide provider of medical examinations and record review services to the medical and disability communities. We actually support Federal, State, local government agencies; property and casualty insurance carriers; third-party administrators; employers and the claimants they serve.

We have been a provider of compensation and pension medical examinations services to the Veterans Benefits Administration since 1998.

QTC provides the detailed medical examination for veterans and then submits the exam report to the VA's claims adjudicators or rating specialists who then, along with the veterans C-file or claims file, rates the veteran's disability claims.

To ensure a quality, timely, customer-focused, and cost-effective process and medical report, QTC pioneered the use of software and technology. In every step of our process, we have created software to facilitate and improve our own efficiency.

Over our 9 years of experience working with the VA, we have come to understand the unique and complex challenges of the VA disability process. It is like no other disability program with which we work.

In an attempt to provide value-added services to VBA and for veterans, QTC applied its knowledge and experience specifically to simplify and streamline the information gathering process for VA's rating specialists.

QTC actually developed what we call an Evidence Organizer prototype. It is an automated tool designed to assist VA's rating specialists significantly reduce the time to determine a rating decision.

The Evidence Organizer has great potential in helping rating specialists search and find relevant medical information critical to make that final rating decision.

How does it work? Basically it converts the cumbersome paper-based c-file to create an electronic record or e-file. I guess that is what everybody is saying. First we have to convert the paper into something electronic.

This document management process begins with a technician scanning in the entire c-file through the use of optical character recognition. The software transforms each record into a text searchable digital record.

At the heart of this process is QTC's core knowledge database, which is built upon our extensive disability examination experience supporting the VA's Compensation and Pension exams.

The knowledge database identifies, highlights, and electronically indexes all keywords. For example, claimed conditions like diabetes, asthma, arthritis, as well as any potential claimable conditions throughout each medical record.

Once the e-file has been established, each record is reviewed, validating the software's indexing, highlighting the records, and now actually linking the referenced medical records and evidence in the c-file to VA's rating requirements or rating codes.

Once all medical records have been reviewed and linked, the e-file is now ready for VA's rating specialist. Right now as we understand it, the c-file is organized or filed according to the date reports or documents are received.

In addition, most rating specialists process a veteran's case addressing and rating one claim condition at a time. Thus, in addressing a veterans' case with four claim conditions, the current average, the rater reviews the entire paper claims file repeatedly, making notes, putting sticky notes, clipping files together to organize the medical evidence.

The Evidence Organizer will not only organize the medical evidence by claim conditions, but also link the available evidence to the actual rating requirements, allowing the rating specialist to still make that final determination and write the rating decision.

Upon consultation with former VA rating specialists, we estimate that turning this manual paper process into an electronic process will actually improve productivity by 37 percent per decision. By applying technologies such as the Evidence Organizer to this paper process, VBA could greatly reduce routine and repetitive administrative tasks for rating specialists, improve their efficiency, and ensure quality and accuracy of each review.

Thank you again for the opportunity to testify this afternoon.

[The prepared statement of Dr. Shahani appears on p. 58.]

Mr. HALL. Thank you, Dr. Shahani.

Mr. Hunter, you are now recognized for 5 minutes.

STATEMENT OF NED M. HUNTER

Mr. HUNTER. Chairman Hall and distinguished Members of the Subcommittee, thank you for the opportunity to appear before you today.

Stratizon Corporation is a veteran-owned Software-as-a-Service company, which has utilized the concepts of artificial intelligence to successfully design a software platform and application solely focused on improving the VA claims processing system.

We have gained valuable insight into the underlying success of using AI to solve the VA claims processing system. First, the technology available is in the marketplace. It is adaptable, flexible, scalable, proven, and cost effective. Technology is not to be resisted but embraced.

Second, success will be highly dependent upon the perspective in which AI solutions are constructed. A true veteran-centric solution of the future must be constructed through the eyes and the situation of the veteran to satisfy the requirements of the State and Federal policies and VA systems and not constructed through the eyes of the multiple government entities to independently present the bureaucracy to the veteran.

Stratizon applied this perspective in successfully piloting for the United States Navy, three unique web-based intelligent solutions that demonstrated how the quality of life for sailors could be significantly improved by replacing confusing, complicated, paper intensive, and manually driven enterprise processes with web-based, easy-to-use, fully automated, and complete self-service solutions, or what we define as "intelligent user interfaces" or "IUIs." And our tool does this without the use of any programs or hard coding.

IUIs can also be designed for numerous veteran events such as transitions from active to veteran status or applications and appeals for VA compensation and health benefits.

The Commonwealth of Virginia's Department of Veteran Services, working with the Joint Leadership Council of Virginia representing 32 veteran service organizations, is implementing such a solution called TurboVet™.

Building on a successful pilot in 2007, the Governor of Virginia has included funds in his fiscal 2009 budget that begins on July 1st, 2008, for full production.

TurboVet™ will provide Virginia veterans, or an authorized representative, or survivor the ability to log online at Virginia.gov, via a personal computer or device such as this Apple IPhone, and select an event that they need assistance with.

Initially a series of statements and questions regarding their status or particular event will be presented. Their personal data currently on file with the State will be retrieved so they may confirm or validate that data, thus improving data integrity and eliminating redundant data entry.

The system will use embedded decision logic to react intelligently to their input to continually refresh and display only the necessary

event questions, thus eliminating the frustration of redundant and unnecessary questions.

A list will be displayed of all State and Federal benefits the veteran has earned with all corresponding documents spanning multiple agencies required for the veteran to submit, thus providing a peace of mind to the veteran their solution is holistic.

Each document will then be progressively, simultaneously, and perfectly auto-populated with the proper data, thus eliminating data transcription errors and numerous processing delays.

Finally, the veteran will have the option to save and print each document locally and, at their discretion, electronically submit their data securely to all participating authorities and systems to be processed and tracked fully and completely.

Virginia's success in using an AI platform is dependent upon the continued support and cooperation of all parties, both political and technical. Decisionmakers need to remain committed to this paradigm shift to the future and must always provide their best institutional knowledge available to ensure the TurboVet™ IUI not only becomes that benchmark of service but also remains that benchmark.

We need technical cooperation between State agencies to take advantage of TurboVet™'s ability to seamlessly exchange data with disparate IT systems. We need cooperation and support at the Federal level.

Federal supervisors in Roanoke have projected that a minimum of 100 days of processing time will be eliminated when the TurboVet™ system is implemented at only the State level.

Stratizon foresees few problems in exchanging data between TurboVet™ and VA systems such as VistA and VETSNET. We fervently believe there could be significant process cycle time improvement and extraordinary cost savings at the State and Federal level if veteran's data at the State level could first be pre-verified against recognized authoritative national VA databases and then seamlessly exchanged upon claims submission and during the claims management process. Virginia's goal is to fulfill the vision of House Resolution 3047 and have a claim prepared properly with attached medical evidence and documentation for electronic submission to Federal adjudicators for rating, and have those claims calculated fairly, consistently, and automatically.

In summary, using a properly designed AI system would dramatically improve the VA claims processing systems by improving the access to customer solution and service for veterans and their family members, reducing the costs to the State in staff administration, training, and paperwork, and improving the accuracy, throughput, and expediency of claim submissions by the State for VA adjudication.

On behalf of the Stratizon Corporation, I would like to thank the Chairman and all Subcommittee Members for this opportunity to be here today.

[The prepared statement of Mr. Hunter appears on p. 61.]

Mr. HALL. Thank you, Mr. Hunter.

Mr. McGarry, you now are recognized for 5 minutes.

STATEMENT OF JOHN F. MCGARRY

Mr. MCGARRY. Mr. Chairman, Members of the Subcommittee, I'd like to thank you for the opportunity to testify before you today.

My name is Jack McGarry. I am the Senior Vice President of Benefits and Chief Risk Officer at Unum.

I have submitted written testimony, which has been made available to you. But will briefly present an overview.

I am here today to discuss how our technology facilitates claim management decisions at Unum. We process approximately 400,000 disability claims per year and pay about $4 billion in benefits directly to our insureds and their families.

Most of Unum's claims are governed by the Employee Retirement Income Security Act (ERISA), the Federal law which generally requires insurance companies to make disability claim decisions within 45 days.

Unum's experience shows that it is possible to manage high volumes of claims in a timely and accurate manner while achieving high levels of customer satisfaction.

Technology is an important component to the solution of managing volumes, timeframes, and customer service. However, the decision about a person's ability to work is also informed by in-depth analysis of pertinent documents and discussions with claimants, their employers, and their physicians in order to assess their ability and motivation to work.

In the end, the disability determination is a judgment call that needs to be made by a person.

In order to assure that the right people are reviewing the right claims at the right time, a combination of Unum's technology and people is necessary.

For example, a routine claim may be automatically sent by the system to one person, while a complex claim with multiple diagnoses may go to another based on a combination of systems and management decisionmaking. As robust as our systems are, a person does look at every claim we pay.

Our technology does the following. It manages documents, facilitates workflow, ensures a complete administrative record, and monitors and measures quality and service results.

First, our system manages documents. Our files can grow to hundreds if not thousands of pages. With our image-based system all files are paperless and multiple people can access the claim same—same claim at the same time. Documents are organized and stored in an efficient manner.

Second, our system facilitates workflow. All new documents and other information are electronically scanned into our system upon receipt. Our technology facilitates parallel claims processing and ensures claims issues are promptly addressed.

The act of scanning the documents as they are received creates an online activity for the claim payer to review. In our system, every action a person completes creates another action or follow-up activity.

The system can also trigger an action for someone to review claims and/or contact customers at key times during the claims management process.

Third, our system ensures a complete administrative record. An administrative record is important for ERISA purposes as well as sound claim management.

When a claim changes hands between claim payers, all of the management activities associated with that claim, including future activities, stay with the claim and are automatically assigned to the new claim payer.

The technology keeps the file together in one place and minimizes any disruption in service due to a personnel changes.

Fourth, our system monitors and measures quality and service results. Management and our quality assurance process require the ability to review files real time, at the same time that the claim payers are working on the files. The system automatically tracks and reports on service times and outcomes.

At the initial level, for the shorter terms claims, our intake department reviews each new claim and assigns an ICD–9 diagnosis code. Our technology then separates the levels of disability into those which have shorter durations and those which may be longer term based on the assigned diagnosis code.

Simpler claims are triaged directly to a claim payer. For the most complex claims, our technology triages the claims to a manager who decides which claim payer to assign the claim based on the experience of the individual.

After the initial assignment, our technology initiates reports based on key measures, including diagnosis, generally accepted medical condition guidelines, and our own Unum database information. These reports can identify claims that need additional work or follow up, and help each claim payer to determine what steps to take next.

Disabilities present a complex management challenge, because they are logistically difficult, judgment based, and can be emotionally charged. Technology can help facilitate judgment-based decisionmaking, but we don't see it as ever being able to replace people in the claim management process.

I would like to end by extending an invitation to all of you and for the VA staff to visit Unum and would welcome the opportunity to continue to be a resource for sharing best practices between the public and private sectors as you continue to evaluate the disability adjudication/case management process.

Thank you for the opportunity to testify before the Subcommittee.

[The prepared statement of Mr. McGarry appears on p. 64.]

Mr. HALL. Thank you very much, Mr. McGarry. You and Dr. Miller have helped set standards for efficiency by finishing in under 5 minutes. Not that we will hold anybody else to that.

Mr. Christopherson, you are next, and are recognized for 5 minutes please.

STATEMENT OF GARY A. CHRISTOPHERSON

Mr. CHRISTOPHERSON. Chairman Hall, Mr. Lamborn, Members of the Subcommittee, let me applaud you for holding these very important hearings and for your opening remarks.

Today I am going to speak to the enabling role of artificial intelligence, to the true obligation of duty to assist, and to the honor bestowed on those who deliver on time and on target.

When I served as Principal Deputy Assistant Secretary of Defense for Health Affairs, I saw our servicemembers sacrifice and our Nation incurred debt.

I saw our veterans' plight when serving as VHA Chief Information Officer and Senior Advisor to the Under Secretary. And I had the great privilege of getting to know servicemembers, veterans, and their support organizations as people providing a great service to our Nation.

All this taught me that everything VA does should be centered around the veteran. It is not today. If we believe that veterans are hurting, and that we have the duty to assist, and that we should be on time and on target, we need a new claims system. And we need it now.

When I was advising VBA in thinking about a new system several years ago, I learned it takes 6 months to a year or more to complete about 8 hours of actual work. Unacceptable.

When a veteran is hurting and needs healthcare, the VA health system assists the veteran and provides care quickly. When a veteran is hurting and needs financial benefits, the VA benefits system does little to assist, forces the veteran to navigate a large bureaucracy and massive paperwork, and provides financial benefits only after months or years. Sadly this all happened to Gunnery Sergeant Cleveland.

So what should happen? First place, VA staff should be coming out and welcoming the veteran, not the way it is done today. They should actively assist the veteran to get everything processed quickly and correctly. Longer term, they should assist as case managers.

Further, we need the continuing and valuable support and assistance of the veterans' service organizations.

In my opinion, changing the process means giving a veteran a temporary financial benefit at least as soon as the veteran files a claim with basic supporting evidence.

For the permanent decision, real time would mean the VA could receive the claim with supporting evidence and make the decision on the same day or at least within a couple of weeks. Further, let us start paying the veteran within 30 days.

In my colleagues' testimony, we heard that technology exists today to greatly improve the speed and accuracy of benefit decisions.

For those who argue claims processing is a much more complicated and difficult process, I counter that it is not. Healthcare, much more complicated and difficult, is figuring out how to provide care in real time without technology and even better with technology.

When I rescued the VistA health information system and moved it to a brighter future, we also made that information available to VBA electronically and in real time.

Now artificial and human intelligence together can help. VA healthcare providers have the decision support to care well for a person in real time. For claims processing, we do not have to wait

for the technology. We can start reducing the misery today and even better when the technology arrives. However, getting to a new, veteran-centric, effective claims processing system with the necessary enabling technology will only happen if VA leadership is fully committed to achieving that vision.

Further, VA leadership will need effective management and staff to make all this happen.

Yes, this is all affordable and doable. First, it could be well built into the $150 billion economic stimulus package moving at this very moment through the Congress.

Secondly, we have to understand that we handle the budget when we send our servicemembers to war. We should do no less when they come home and need our help. This is a part of real cost of preventing or conducting war.

Today, there is a failure to understand and appreciate the veteran's plight. Feel what it is like for a veteran to live in uncertainty and without support for months, or a year, or more. If we did that for healthcare, that would be totally unacceptable.

Bottom line, change the assumptions. Change the process. Use the best technology. Change the attitude. Care for the veteran. On time and on target is what we expected of our veterans and what we should expect of VA. The duty to assist is an obligation that VA with regards to benefits has yet to honorably discharge.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Christopherson appears on p. 75.]

Mr. HALL. Thank you, Mr. Christopherson.

Eloquent, powerful testimony all. The question I wanted to ask, first of all, Mr. Christopherson, you talked about starting paying veterans once they filed a complete claim within 30 days. First you said immediately. And then you said at least within 30 days. This is something that many of us have been advocating for.

Do you have a figure in mind or a percentage disability rating in mind that would be your best guess average or, you know, baseline to start while the process goes forward?

Mr. CHRISTOPHERSON. Not really. I think what you have to look at the situation of the person's need, the veteran's need at that time.

Secondly, there is obviously a political process you have to go through with budgetary decisions. And what I may ask for and what I think should happen, my sense of right now is if a veteran has a disability, whatever degree is appropriate at that time, that we have some degree of confidence in, grant it. And start paying it within 30 days in terms of that.

Second part is, and by the way, that starts to shift the burden onto the VA rather than onto the veteran. Right now we have a backward, upside down system. Where we sort of say if you can figure out how to navigate the system, maybe we will let you get benefits. And Lord knows how long it is going to take.

If we start the reverse and say we are going to start paying some benefits, and we will make some mistakes, but by the way, they served. We didn't essentially ask them a lot of questions at that time. They didn't demand a lot of answers at that time. We should be doing the same here.

So I think essentially what you really have now is give as much as you can with a certain reasonable amount of risk. If we do it for a temporary basis and for a relatively short period of time, the government is not at great risk in doing that.

If you couple that with all the things we have talked about here at this table about moving the whole time process down, the risk to the taxpayer goes down very substantially as well.

Mr. HALL. Thank you. Mr. Mitchell, your work in artificial intelligence covers a broad area from computer learning to advanced robotics.

I was wondering what level of technology are we talking about for transforming the VA claims processing system?

Mr. MITCHELL. Well I think the example of Highmark is a good one. They automate the claims processing. And, in fact, TurboTax is another good example. Both of these are systems that essentially are very well understood. These are not bleeding-edge technology. They are based on very well understood techniques that come out of artificial intelligence.

But essentially they are ways of encoding in software a large collection of rules like the one that you mentioned in your own opening remarks that say "if, the form has this kind of data, then this is an appropriate kind of disability rating."

And so that technology for rule-based processing is very well understood. It is something we could do today and is widely done today.

Mr. HALL. How long would you guess it would take, Mr. Mitchell, for such a system to be created?

Mr. MITCHELL. I believe if—so I looked in preparation for this meeting at some of the rules that are used for assigning disability benefits based on these conditions. To take a standard rule-based engine and to input those kind of rules is months. It is well under a year.

Now I can't estimate the additional sort of organizational and bureaucratic adjustments that would be needed—that would have to be done to go along with that. But from a purely technical standpoint, we are talking about months.

Mr. HALL. First to you, and then to anybody else on the panel, how important would it be that we get a digital handoff from the DoD to the VA? I heard when I was in Landstuhl, Germany, in October on my way back from Iraq. The commander who is in charge of the hospital in Landstuhl says that they are bringing back the servicemembers who are injured with an electronic record, which is like an onion. They keep adding another layer to the onion at each place to what they added in theater.

And then they added in, the treatment they are getting while they are being flown, and then when they get to Landstuhl, they add more records about the medications, or the therapies, or the treatments, or surgeries, whatever is happening to that veteran.

When they return to Walter Reed or Bethesda, then another layer is added to the onion. They told me that in December, last month, they were going to be able to start handing this off to the VA. Well, I am not sure if—I haven't gotten a clear answer as to whether this is actually happening yet. But assuming that happens, how important is that to being able to start this process?

Mr. MITCHELL. Yes. You know, I would leave that to people who know more about the detailed decision—the detailed policy for assigning benefits. But it is clearly the case that these rule-based systems can apply only to data that has already been captured online.

And so if that part of the electronic record is relevant, then it would have to be online, either by being passed off or by being transcribed from paper in some other way.

Mr. HALL. Dr. Miller.

Dr. MILLER. The CAPRI system that the VA has developed for examiners to record the disability exams within VHA to pass along to VBA, I believe it was already in pilot that you are referring to. So the problem is the DoD records are in different format computationally than the VA records are. And that is one of the logjams in the disability determination.

But for the BDD process that Dr. Christopherson referred to it, if in active service they use CAPRI forms to do the quick and dirty disability determination, that is an existing system the VA developed. And they could probably use that as the basis fairly quickly for the initial short-term disability ranking and payment while more electronic work is done.

Mr. HALL. And——

Mr. CHRISTOPHERSON. Mr. Chairman, if I may.

Mr. HALL. Yes?

Mr. CHRISTOPHERSON. Let me fill in. It started when I was at DoD and then continued when I was at VA, which was the idea of doing exactly what you are describing. Which is to make the information that DoD generates electronically available to VA both for healthcare and for benefits determination there.

Much of that information is now available. If it is electronic, it is available to VA both sides of the equation there. What you have to look at, what will slow things down is for older veterans who didn't have much care electronically in DoD. It has to go through the paper route.

The later era, you have a mixed bag of that. You have to sort of deal with the mixed bag of that. But again, digitalize that and then essentially move it across.

The next generation coming through should be heavily digitized. And the data should be standardized, which means you really can feed it into the rules engines that these folks are talking about here.

Mr. HALL. So the most time-consuming task that we face is entering all of the old data that is in boxes and files, like the ones we saw earlier, into the system. And then starting from whatever point the system is online, hopefully it will be expedited and more or less instantaneous.

Mr. CHRISTOPHERSON. I would suggest, Mr. Chairman, that is not a staff issue. That is more likely going to be a contract issue. You can make that happen as far as you are willing to spend money to make it happen.

Mr. HALL. It always comes down to money, doesn't it? Dr. Miller, I have one more question for you. I have often heard that doctors use a technique called differential diagnosis where they have a hypothesis about a patient's illness and then ask questions to rule out conditions until they come up with a diagnosis.

Can a computer using a rule-based expert system as you described, assist with assigning disability ratings that cover the VA's 700 codes and its zero to 100 percent range of severity that often includes multiple conditions? How long would it take a computer to do that?

Dr. MILLER. I worked on diagnostic systems of the type you are referring to for a quarter century. There are probably seven or eight techniques in addition to rule based that can be used to do what you have asked.

Essentially the idea has already been stated. But you would use electronic means to identify findings in the veterans records or an active service person's records. And that could cue the practitioner taking care of them that this patient is potentially eligible for disability and hone down into the specific categories of the 700 that the veteran might be eligible for.

In the end, it still should be a decision by a human. But reminding people when they might not be thinking about disability in the heat of battle or whatever that is an important component of the care is something that such tools would be able to do.

Mr. HALL. Thank you very much. Dr. Shahani, we have often heard that claims have become more complex with over eight conditions per claim instead of just one or two.

Could a system such as QTC's rate all of those conditions given that the claim is already in a "ready to rate" format such as the one described by Mr. Hunter? How long would that take?

Dr. SHAHANI. Just to paraphrase your question again, are you asking then for the time it would take to code all the 700 codes, the multiple conditions?

Mr. HALL. Yes.

Dr. SHAHANI. Right. Basically like, you know, what Mr. Mitchell said, anywhere from 6–9 months to come up with that system.

Mr. HALL. Can you tell us more about the knowledge library? Though you did not mention it in your testimony, what would its use be once the exams are stored?

Dr. SHAHANI. Basically the knowledge library that we are talking about or the knowledge database contains, you know, the rating codes that are in 38 CFR part 4. The claim conditions that we have encountered throughout the 9 years, and all the potentially claim conditions, and all other keywords that are within the rating code, because each rating diagnostic code actually has descriptions. So they will say range of motion limited by 30 degrees or 40 degrees. All of that is within that knowledge database.

So when it actually scans the records, it identifies and highlights those key words. And then later links, through the rule-based technology or artificial intelligence, links that medical evidence to the rating code.

So what the rating specialist will see is actually medical evidence already showing them what rating codes they need to consider. But they need to make the final decision.

Mr. HALL. Thank you, Doctor. Mr. Hunter, I want to ask you if you could describe a little bit more about the system that you developed for the Navy, that you referred to during your testimony.

Mr. HUNTER. Well we took the approach that we have—we have developed what has been discussed today would take another 6–9

months. Over the course of last 5 years, we used open standard technologies, realizing that no matter what software tool we developed would have to work with a multiple set of disparate systems and communicate with that data.

So we—when you put yourself in the seat of the veteran and as the bureaucracy, the IUI will reflect the Boolean logic that is the knowledge library. It actually is that the pages refresh reflecting that knowledge library to say okay, based on what you have told us, this is the paperwork, what you need to do. Maybe the medical records that need to be attached. And we can do it without programmers. That was a real key, because you don't want to get—when we worked in the Navy with PeopleSoft and you had to write hard code APIs, you get bogged down. And we just do it now in drop-down menus so you can select from a drop-down menu that knowledge library in which to inject into the question.

So we have accelerated. And the technology is not unique or patentable. It is just the way we presented that tool in order to have the institutional knowledge get transferred into that IUI. That is what is critical.

Virginia refers to it as the unlucky or lucky vet. It does take 3–5 years to scale up a Federal adjudicator or veterans service representative. So if the veteran is lucky to call in and get someone who has just been there 2 months, well they don't know all the questions to ask or the right questions. And that is the key.

If we don't catch this problem at the tip of the spear, it just rolls through the entire system. And that is what we are finding. They want to get the person who has had 35 years. It is just critical that they have a consistency of every veteran with the access to be asked the right questions and all the questions, because that starts the claim bill process.

So some of the other companies here today can take a claims management process forward. And we have done that unique and successful—successfully.

Mr. HALL. So how long should it take to rate a claim in your opinion?

Mr. HUNTER. Well in our opinion it should take less than 48 hours, depending if the right Boolean logic is put in.

Now I also agree it will never take the place of a human. All we are doing is shifting the job focus from those people from this data entry and doing what they really are set out to do, which is the human interaction.

I also believe that the technology will never solve 100 percent of the problems. What we found is it is more of an 80–20, 90–10 rule. That you do not want to take the time or the money to put in this logic for the person with the extreme case. That person needs to be immediately put to personal attention, because they need that.

But for the bulk of the people, the frustration of going through the same questions and same paper, it is ridiculous.

And we take a position it is more about the data than the document. You need some documents by mandate. But documents to us are online receipts, box and lines around the data. It is the data that is really the back-end systems need, which was to close. We put that in standard, native XML so we can very confidently talk

with any back-end system without trying to change that system. That just seemed—that really lengthens the time.

They just need good data to do what they do well.

Mr. HALL. Thank you. Mr. McGarry, I just wanted to ask you—well first of all, thank you for being here again. You have been a help to the VA system in the past. And I appreciate you being here again.

It is curious, you mentioned that you can process some claims within 3 days but must process them within 45 days in order to be ERISA compliant. Should VA be required to meet the same standard for processing a claim?

Mr. MCGARRY. I think it is certainly possible for the VA to meet the same standard for processing a claim. You know, my view of it is that the processing part isn't the only piece. There is the definition of disability as well as the resources applied.

And so my only recommendation is in addressing this problem. You address all three of them to get a holistic and consistent solution to it.

Mr. HALL. Does——

Mr. MCGARRY. Mandating one or the other I think is going to be—fall short of the total solution.

Mr. HALL. Right. Does Unum have a backlog of claims?

Mr. MCGARRY. We do not.

Mr. HALL. Do you see a lot of fraud?

Mr. MCGARRY. We see—you know, fraud is a high standard requiring intent. We do see misrepresentation or people——

Mr. HALL. Misunderstanding?

Mr. MCGARRY. Misunderstanding. And so there is a reasonable amount of that. You know, we discover a fair amount of claims through investigation and surveillance for instance.

Mr. HALL. Do you think that if the VA used a triage system similar to Unum's where the claims got sent to a subject matter specialist, it would improve their success?

Mr. MCGARRY. Our actual triaging is less around subject matter specialists and more around the duration and complexity of the claim.

I think one of the biggest drivers of our success is quickly separating claims into those that can be solved readily and quickly versus those that need more in-depth analysis and investigation.

Mr. HALL. The 80–20 or 90–10.

Mr. MCGARRY. And the thing is, you know, is don't mingle those two. Don't have the same people doing the 90 and the 10, because the 90 are quick hits that you can do in 10–15 minutes all day long. It is a processing work. Whereas the 10 is more of an investigative work that takes real expertise to do. And so one of our successes is separating those right up front.

Mr. HUNTER. And, Mr. Hall, may I add that quickly, we have found in Virginia's pilot that less than 95 percent of the claims are ready to rate when they are submitted by the hardworking VSOs in the State, only 5 percent. So if they are not ready to rate, the claims management process can't proceed properly.

Mr. HALL. Thank you. We are going to have—since Mr. Lamborn is not here, we will have the Minority Counsel ask a few questions. And then we will move along to the next panel.

Mr. LAWRENCE. Thank you, Mr. Chairman. Many of your questions were similar to Ranking Member Lamborn's, so I just have a couple.

For Mr. McGarry and Dr. Shahani, in your testimony you mentioned that your systems have the capability of managing and organizing multiple documents.

Veterans claims files, as you know, can be rather voluminous. They can submit anything they feel is pertinent as evidence. Would that be problematic to your systems?

Dr. SHAHANI. When we ran the prototype basically and scanned c-files, we are able to separate duplicates. We are also able to separate non-medical from medical records. And so we don't see that to be a problem. We can build in rules again to separate out all those different records.

Mr. MCGARRY. We have files too that stand 6 feet tall stacked one on top of the other, which is why it is such a must to have a document—a document management system is such a big piece of the file so that you can footnote and identify those documents that are germane to the decision.

Mr. LAWRENCE. Thank you. And, Mr. McGarry, how long did it take Unum to establish your system?

Mr. MCGARRY. It took approximately 3 years.

Mr. LAWRENCE. And for Mr. Mitchell, you had mentioned additional benefits that may accrue from more advanced technologies that can be adopted once the claims are captured and managed online. Could you elaborate on that just briefly please?

Mr. MITCHELL. Sure. I was primarily thinking of data mining that collection of benefits claims and how they were ruled on finally. So if you had that kind of data, you could data mine that for example to detect the features of the claim that indicate, for example, that this is likely to require a particular type of special processing. And to do the kind of, you know, initial sorting that these gentleman were talking about.

You could do data mining to detect the features of the claim that suggest perhaps this should be looked at as a potential case of fraud or misunderstanding. That is very common in the insurance industry.

So primarily I was thinking of the—of the uses of that data in a data mining.

Mr. LAWRENCE. Thank you.

Mr. HALL. I would like to thank our panel. It is very, very interesting. You have exceeded my expectations. I don't know about anybody else, but I trust that these are very exciting possibilities that you raise. So thank you again for your testimony, and for your responses to our questions.

This panel is dismissed, And we will ask our third panel to come forward.

Kim Graves, the Director of the Office of Business Process Integration of the Veterans Benefits Administration, U.S. Department of Veterans Affairs, and Stephen W. Warren, Principle Deputy Assistant Secretary of the Office of Information and Technology, U.S. Department of Veterans Affairs.

And if we are lucky, the votes will be held off until after we hear from our two panelists and ask a couple of questions.

While you are getting settled, I will tell you that within the last couple of months, our office up in New York's 19th District resolved a claim for a Navy vet from World War II which was the most extreme case that I have come across yet.

A man who had two ships blown out from under him in the Pacific, one by a kamikaze pilot, one by a torpedo. Twice was floating in the ocean with sharks and body parts floating by him. Had to be pulled back off the ship by his buddies, because he kept on trying to rescue more of his shipmates and get them in the lifeboat.

He has a drawer full of medals for it. He is 84 years old now, and had been diagnosed as schizophrenic, which of course is not a service-related diagnosis. With the help of his friend who happens to be the local Veterans of Foreign Wars commander of the post that he belongs to, and my staff, and working with the local VA, and the VSOs in our area, and so on, we corrected it.

And Sailor Ken McDonald had a happy Christmas with $100,000 of back disability pay, and $2,400 a month, and 100 percent Post Traumatic Stress Disorder rating, which is evident when one talks to him about—even all these years after. He was 20 when these incidents happened. Yet today he still shakes and has a hard time, when you bring it up and ask him about it.

But we can prevent worst case scenarios. I guess the worst case is, if he didn't live to have the resolution. But hopefully we can move this all toward a quicker, more efficient resolution.

And Director Graves, we have your statement—your written statement is in the record. So you have 5 minutes give or take. And you are now recognized.

STATEMENTS OF KIM A. GRAVES, DIRECTOR, OFFICE OF BUSINESS PROCESS INTEGRATION, VETERANS BENEFITS ADMINISTRATION, U.S. DEPARTMENT OF VETERANS AFFAIRS; AND STEPHEN W. WARREN, PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR INFORMATION AND TECHNOLOGY, OFFICE OF INFORMATION AND TECHNOLOGY, U.S. DEPARTMENT OF VETERANS AFFAIRS

STATEMENT OF KIM A. GRAVES

Ms. GRAVES. Mr. Chairman and Members of the Subcommittee, it is a privilege to be here today to talk about the use of information technology to enhance claims processing within the Veterans Benefits Administration.

VBA has made significant strides in the use of information technology to improve claims processing in all of our benefit programs.

Our current focus is the development of a comprehensive strategy to integrate the various initiatives already underway and leveraging successes already accomplished. VBA is collaborating with the Office of Information and Technology in developing this strategy to ensure our mission needs are met and that the appropriate enterprise architecture is employed.

At the core of our strategy is the implementation of a business model for compensation and pension processing that is less reliant on paper documents. The use of imaging technology and computable data to support claims processing in our insurance, education and loan guaranty programs has been successful for many years.

Initial pilot efforts in our compensation and pension business line have demonstrated the feasibility of using this type of technology for these benefit programs as well.

Our comprehensive strategy, the Paperless Delivery of Veterans Benefits initiative, is envisioned to employ a variety of enhanced technologies to support end-to-end claims processing.

In addition to imaging and computable data, we will also incorporate enhanced electronic workflow capabilities, enterprise content, and correspondence management services, and integration with our modernized payment system, VETSNET. In addition, we are also exploring the utility of business rules engine software for workflow—for both workflow management and to potentially support improved decisionmaking by claims processing personnel. A recent request for information (RFI) to industry yielded a variety of products that may be useful in our end-state vision.

As part of our strategy for improving the claims processing business model, VBA recently contracted with IBM to conduct a study of the current process and suggest improvements. We expect their report shortly and will assess their findings as we move forward with documenting our information technology strategy.

As noted previously, two pilot programs are currently underway and have demonstrated the utility of imaging technology in our compensation and pension business line. Both projects utilize our Virtual VA imaging platform and related applications. Virtual VA is a document and electronic claims folder repository.

The first pilot supports our income-based pension program. It involves imaging documents received in conjunction with the annual income reporting process.

Imaging allows the three Pension Maintenance Centers to make the necessary claims adjustments without need for retrieval and review of the paper claims file.

The second pilot supports the compensation program at our centralized rating activity sites for our Benefits Delivery at Discharge program. The separating servicemember's medical records and supporting claim information are imaged at the outset of the claims process. This allows rating veteran service representatives to make decisions based solely upon review of the imaged records rather than reliance on the paper claims file.

Further refinements of the business process are now underway and will be factored in as we evaluate options for expanding use of this technology.

An additional pilot project is also under development. This project will examine issues such as user authentication and using online forms to provide the capability for the initial "electronic" filing of benefit claims. This is a first step in implementing online self-service to allow veterans to manage some of their interactions with VA electronically.

Integration with VETSNET is also a critical success factor in our overall strategy. We have made significant progress in the implementation of VETSNET over the past 2 years.

Approximately 98 percent of all original compensation claims are now being processed end-to-end in VETSNET. And we are now paying monthly compensation benefits to more than 850,000 vet-

erans or approximately one of every three compensation recipients using our modernized platform.

With our next conversion of records from the legacy Benefits Delivery Network scheduled for April, VETSNET will become the primary payment system for compensation benefits.

Integration and data exchange with the Department of Defense are also essential, as is our continued expansion of exchange of healthcare information with the Veterans Health Administration.

As we continue to move forward with the efforts described here, we are focused on developing an integrated project plan, ensuring the needs of our veterans and their families are documented and attainable. Demonstrable milestones and performance metrics will be incorporated so that we and our stakeholders are able to assess our progress in achieving our vision.

To assist in developing this plan, we are working closely with our Office of Information and Technology partners to develop a request for proposals to engage the services of a lead systems integration contractor.

The integrator will provide support in documenting both the business and technical requirements for implementation of our long-term strategy.

I assure you that the Under Secretary for Benefits is committed to implementation of the Paperless Delivery of Veterans Benefits initiative.

Together with our partners in the Office of Information Technology, we believe this goal is not only attainable, but is imperative to ensure the best possible service to our Nation's veterans.

We thank you for the opportunity to address these important issues and would be happy to address any questions that you may have. Thank you, Mr. Chairman.

[The prepared statement of Ms. Graves appears on p. 78.]

Mr. HALL. Thank you, Ms. Graves.

Mr. Warren, you are now recognized for 5 minutes.

STATEMENT OF STEPHEN W. WARREN

Mr. WARREN. Mr. Chairman and Members of the Subcommittee, I would like to thank you for the opportunity to testify today on the use of information technology to enhance claims processing, within the Department of Veterans Affairs, as well as utilize data from the Veterans Health Information Systems and Technology Architecture or VistA system to assist in the processing of disability claims. These are very important issues that affect the life of every veteran and their just compensation for disabling injuries received while serving our Country.

I would like to begin by addressing VA's efforts at leveraging information technology to improve the timely delivery of veterans' benefits. The Office of Information and Technology has been collaborating with the Veterans Benefits Administration in the development of a comprehensive strategy to achieve their target business model.

The operational concept of the Paperless Delivery of Veterans Benefits initiative is to employ enhanced technology platforms to include imaging, computable data, electronic workflow capabilities,

and enterprise content and correspondence management services. Some of the same technologies you heard from earlier panelists.

The initiative will integrate with the Veterans Benefits Administration's core business application and modernized payment system, the Veterans Service Network known as VETSNET.

My office also supports the Veterans Benefits Administration's market research of business rules engine software and other decision support technologies, which can be leveraged to improve and expedite decisionmaking by claims processing personnel.

We recently released a Request for Information from industry or RFI. This request for information resulted in the demonstration of technologies that may be appropriate for the Veterans Benefits Administration's target business strategy.

The request for information process helps us gain a better understanding of how private industry and other government agencies have employed these types of technologies to support their specific business models.

We also have conducted an analysis of technical architectures, business applications, and Commercial Off-The-Shelf products, utilized to support the business processes of the Social Security Administration, as well as the Veterans Affairs Organization of Australia and Canada.

A Statement of Work is currently being prepared to engage the services of a Lead Systems Integration Contractor. The purpose of this contract is to assist with the development of the overarching strategy and business requirements for the Paperless Delivery of Veterans Benefits initiative.

These key deliverables will enable us to begin specifying the supporting technical architecture and business applications.

Mr. Chairman, I would like—now to highlight how the utilization of data from the VistA system, the one used by the Veterans Health Administration, assists in the processing of disability claims.

The business application used by the Veterans Benefits Administration to navigate and retrieve clinical data within the VistA system, is called the Compensation and Pension Record Interchange or CAPRI. Online access to medical data, housed in the Veterans Health Administration VistA system, supports the disability benefits determination.

CAPRI also provides access to some Department of Defense medical records through integration with the Federal Health Information Exchange framework. CAPRI was nationally deployed during fiscal year 2001, and delivered cutting edge "point and click" technology to the users' desktop at that time.

Since its deployment, the application has been repeatedly enhanced as new categories of clinical data in the Veterans Health Administration and Department of Defense became available.

Mr. Chairman, in closing I want to assure you that we remain steadfast in our efforts to continuously optimize any and all information technology improvements, as we strive to improve our veterans' benefits IT environment.

Our goal is that these efforts, coupled with the support of the Veterans Benefits Administration and our partners in the private sector, will greatly improve the business processes, which will sig-

nificantly enhance the disability claims process that our Nation's heroes undergo.

Thank you for your time and opportunity to address these issues. I would be happy to answer any questions you may have.

[The prepared statement of Mr. Warren appears on p. 79.]

Mr. HALL. Thank you, sir.

Ms. Graves, I just wanted to ask you, in November of 2007, VA testified that it has received $20 million in a supplemental appropriation for electronic processing initiatives.

When this Subcommittee asked about IT expenses, we were given an analysis that showed that VA spent approximately $300 million on VETSNET since 1986. With all that time and money, how is it that we still do not have a system that satisfies veterans' claims processing needs?

Ms. GRAVES. Thank you, Mr. Chairman. Moving to the VETSNET environment, off of our antiquated and outdated payment system has been a paramount concern to the Veterans Benefits Administration.

The actual software development component of VETSNET began in 1996. And it has taken us a significant amount of time to make these accomplishments.

Over the past 2 years, Under Secretary Cooper instituted a variety of changes to include restructuring the overall management of the VETSNET project. We believe that the progress that we have made demonstrates that we have learned some very significant lessons in how to better manage the business process of IT development.

We hope to bring to bear these lessons learned as we move forward with our next initiative, which is that next step in bringing a paperless environment to the Veterans Benefits Administration.

Mr. HALL. It sounds like your current plan to make the system paperless means that the rater does the same things with the screen that they did with the paper record unless I am mistaken.

What is the plan to make an electronic record computable so that data can be mined, matched, and manipulated?

Ms. GRAVES. There are a number of efforts that we will have to address with our information technology partners.

I think as you heard in the prior panel, some of the issues that we must contend with deal with the records of veterans who may have exited the service many years ago. Many of these documents are handwritten.

This presents a number of challenges in turning that into computable data. We will be looking at all of our opportunities for moving forward from a paper environment, whether it is images, computable data, all along the spectrum, to enable us to better utilize the data in support of claims processing.

I think as you heard from the panels before, the rating process in and of itself is significantly difficult. There is much human judgment that must be applied. It is not only a matter of determining a level of disability, but making a judgment as to whether the disability itself was incurred in or aggravated by service.

So there are a number of factors that must be brought to bear. And as we work with our IT partners, we will be looking for all

of the opportunities that we can utilize to facilitate bringing this to a more streamlined process.

As we mentioned in the testimony, IBM Global Services has been with us for the past number of months conducting a study of the claims process. We are anxiously awaiting their findings to help us look at the business model itself and match that up with technologies that are available to improve the claims process.

Mr. HALL. Thank you. The VA already has Veterans Online Application (VONAPP) so that veterans can file online. So, I am wondering what would be the purpose of an additional pilot project you mentioned to study this capability if the capacity already exists, or are they dissimilar?

Ms. GRAVES. The current VONAPP process that we have is an online application. The veteran can fill in the application, by typing in their information in the application. They can either email that document, that application into us, or mail it in hard copy.

In either case, we accept the application. We must also go out and get a physical signature from the veteran. Regardless of whether they have submitted it online, we must have the signature.

And also in its current form, the information that we receive on the veteran's application is re-keyed into the claims processing system.

The pilot that we are working with our IT partners on will take the next step, and hopefully begin to utilize fillable forms, computable data, and also explore our ability to accept an electronic signature as we move forward with the appropriate business process that will allow us to accept that online signature.

Mr. HALL. Thank you, Ms. Graves. Mr. Warren, what is the Under Secretary for Benefits' commitment to fully instituting an automatic claims processing system? What has he done in 6 years, in your opinion, to get to this goal, and why has it taken so long with so few results?

Mr. WARREN. Mr. Chairman, I probably should caveat my remarks with stating that I have only been at the VA for the last 9 months. So I can only give you my observations for the last 9 months.

Mr. HALL. That is good.

Mr. WARREN. The commitment that I have seen by our partners in the Veterans Benefits Administration is a commitment to make the dramatic changes necessary to go forward.

And I think one of the things that it is good to keep in mind as we talk about how do you take an old paper-based system and move it into the nirvana, if you will, or at the punch of a button it makes a determination, there are many steps you need to go through. And some of them were touched upon.

It is moving from paper data to electronic data. It is moving to electronic data that is computable. It is utilizing workflow tools or technologies that allow you to move the information to the appropriate folks.

Then there is the need for tools that assist in the determinations up to the point where maybe you can have a tentative determination. And then somebody having to look at it. Each one of those

things take time, especially with a consideration for what are the rules that the organization has to follow?

And the Department, through the Veterans Benefits Administration, is looking at those rules and trying to understand what does it take to automate those rules and are there limitations in the rules themselves?

As an example, our colleagues in the Australian Veterans Administration went through this process themselves. And working with their legislature, it took them 4 years from going to "we want to do this" to, "how do we need to change the rules?" How do we need to make the rules actionable, so we actually can use automated tools to make the determinations?

So I would love as a veteran for it to be easy. However, we have complex rules and complex systems that need to be taken forward through a deliberative process so we don't mess it up along the way, sir.

Mr. HALL. Some of our previous panelists suggested, coming from their private sector positions, their view was that a system like this could be developed in 6–9 months. Do you think that is accurate? I don't mean completely dialed in and have all the data entered into it, but to have the actual system.

Mr. WARREN. And to give you a sense in terms of how quickly you can do things, prior to the Department of Veterans Affairs, I was the Chief Information Officer at the Federal Trade Commission. And we brought on the Do Not Call Registry in 100 days. So you can do complex things quickly. But the National Do Not Call Registry is actually a trivial effort in comparison to what it will take to make the system, and the processes, and the rules that the folks need to use into an automated system.

I wish it was 6–9 months, because then we could get it done. But it actually is going to take longer once you look at the complexity of the rules and the ambiguity in some of the rules. And we will need your assistance and the assistance of this body as we identify what rules might be too ambiguous for the utilization of advanced technology to make the determination.

Mr. HALL. There used to be a VA Office of Seamless Transition, which has now become a VHA/DoD Outreach Coordination Office. How has VBA been dropped from the process? How are veterans, who seem to have a difficult enough time in getting claims processed, supposed to navigate the system without this level of support? I guess that could be to either of you. But——

Ms. GRAVES. Mr. Chairman, I apologize. But I am not aware of the change that you have stated.

Mr. HALL. Referred to?

Ms. GRAVES. Referred to. We can certainly take that question back and get you a response on that. I apologize for not having that information.

[The response was provided by VA in the answer to Question 3 from the post hearing questions for the record, which appears on p. 101.]

Mr. HALL. Well, I will just ask one more. And then turn it over to Mr. Lamborn for his questions. But I am just wondering why the Clevelands, Gunnery Sergeant and Mrs. Cleveland, even though

they went through the BDD process and—well, you—were you here for their testimony?

Ms. GRAVES. Yes, sir.

Mr. HALL. Do you—would you hazard a guess as to why it would take a year to rate and compensate Mr. Cleveland? Or is this just one of those stories that you hear about where things fell through the cracks repeatedly?

Ms. GRAVES. Mr. Chairman, first and foremost, I want to apologize and did apologize to Mr. and Mrs. Cleveland for the difficulty that they endured moving through the claims process.

I do not have the specifics on the timeline that Mrs. Cleveland so eloquently went through. I give you my assurance that we will be doing that when we go back to the office to make sure that we have not only addressed any issues that still may be outstanding. Unfortunately, when we become aware of cases that in falling through the cracks is such a—it doesn't do justice obviously to what the family endured.

But certainly as we become aware of these types of circumstances, we do look at these. And try to make adjustments where we can to ensure that we put procedures in place to try to prevent these from occurring in the future.

Mr. HALL. I would guess that maybe we were talking about the 80–20 or 90–10. And this might be in the 10 or the 20. In other words, it is the more dramatic instances of evident disability. Like I have had a couple that my office has dealt with like the sailor with the two ships blown out from under him for instance. If one had 80 or 90 percent of the cases being processed with the computerized, automated system primarily, and then have the ones that need special care being diverted to human resources, you would hope that would solve the problem.

I am just curious it would seem that an automated registry, a record, right from the word go, would eliminate the many times they were asked to resubmit, the many times they were told the record couldn't be found, that there was no "this or that" form or medical report.

So let us all hope that we are after the holy grail here. I guess my last question to either or both of you is are the systems that you already have in place and that you are—that the VA is developing, going to be, or are the people who have put those in place going to be, open to changing them or adding things like some of the previous panelists talked about?

Ms. GRAVES. If I may, certainly one of the lessons that we have learned in the last couple of years with the VETSNET initiative that there is a pull from our employees for the types of technologies that we have been delivering and that we will continue to deliver.

Our paperless rating process and the benefits delivery at discharge pilot has also demonstrated from our ratings specialist, our rating veterans service representatives, that not only can they rate a claim in a paperless environment, but they prefer it, at least the ones who have gone through that process.

That has given us a demonstrated capability that this is something that can be accepted and will be accepted by at least a group of our employees.

So we are looking at that process right now on how we can expand that. And that would certainly, in taking Mr. Cleveland's case, if, as we expand the BDD process and the paperless BDD process, when Mr. Cleveland—coming through now, were in that population, we would have received his paper records at the time of his discharge. And then imaged them immediately into the system. So at least that opportunity for a loss of a record would be certainly greatly mitigated or diminished.

So we believe that our employees are open. And would welcome the advanced technologies that are available. And we are very anxious to set a course that is achievable and to move forward to a better system for our veterans.

Mr. HALL. Thank you very much, Ms. Graves.

The Chair will now recognize Ranking Member Lamborn.

Mr. LAMBORN. Thank you, Mr. Chairman. And this is for either one of you. Can you give some examples of some of the types of questions that you expect the IBM study to be able to answer?

Ms. GRAVES. Thank you. We have just received a very preliminary report from IBM. But we are hopeful that the IBM group will be able to point us in a direction of where we may be able to improve the process.

I certainly expect that we will hear from IBM some of the things that we have heard today on the panel. That our reliance on a paper-based system is detrimental to the overall efficiency of the process. I am speculating on that. But certainly we would expect to derive great benefit from IBM's observations as they have gone and looked at our claims process.

Mr. LAMBORN. Now apart from the rules-making ability or excuse me the claims adjudicating ability that hopefully will eventually be realized as a goal. Just in the meantime, it seems that document management would be a huge benefit. You know seeing the picture that the Chairman showed of an eight-inch stack of paper, or we saw something like that on the table in front of us today.

Is the IBM study looking at that only, or are they going beyond that? Or what are they looking at again?

Ms. GRAVES. The IBM study was designed as a comprehensive review of the compensation claims process. I believe their charge was to come back with any suggestions that they would have, whether it is regulatory, legislative, or information technology that might be brought to bear to improve the claims process.

The pictures that were shown today and the look, the physical look at Mr. Cleveland's—the portion of Mr. Cleveland's records, again, certainly demonstrates that as we become better able to turn that paper into something that is easier to manager, easier to keep control of, we can only speculate that will improve our ability to manage that workflow.

Some of the technologies that we have been exploring with our partners in the Office of Information and Technology, we are looking forward to evaluating how those types of workflow management and document management tools will enable us to not only take those paper records and turn them into an image or some type of computable data, but also to manage the flow of that information throughout the claims process.

Mr. LAMBORN. Now I take it that they are not looking at the ability to come up with decisions through artificial intelligence or anything like that. They are not going that far on the cutting edge, are they?

Ms. GRAVES. Sir, I would presume that if IBM, in their review of the process, believes that is a viable opportunity that they will present that. Their charge was relatively open to come in and review the claims process and provide recommendations for improvement. And they were not constrained on the types of the improvements that they can provide to us.

Mr. LAMBORN. And you have seen a preliminary version of that?

Ms. GRAVES. Very preliminary. Just a couple of pieces of it. I have not had a chance to go through it. And it has not been formally released to the Veterans Benefits Administration yet.

The only look I got at it was to ask so they could ask a couple of clarifying questions as they were putting some touches on their draft.

Mr. LAMBORN. Okay. Well I look forward to helping or learning with you some of their recommendations and helping the VA as we go forward to make this a better process. Whether it is just document management or even beyond that into the processing of claims.

So thank you for what you are doing. And thank you for your testimony today.

I yield back, Mr. Chairman.

Mr. HALL. Thank you Mr. Lamborn. Ms. Graves and Mr. Warren, thank you for your testimony and for the work that you are doing. And I echo the Ranking Member's comments that we are here to help, and to nudge, and to stir the pot.

And we would love to see a copy of the report as soon as it is in a presentable enough form that you can share it with us. The sooner the better. It couldn't happen too fast for us.

We all have veterans in our own districts that we deal with on a day-to-day basis and our staffs deal with on a day-to-day basis. And we see, as with the Clevelands here, the cases I think that get to a Congressional office are the ones that have had trouble. So we don't necessarily see a scientific sample.

But what we see are the ones where the system failed to come through in an adequate or in a timely fashion. And that is, for me, what motivates me, and I think all of us to, want to cover and take care of our veterans without these problems arising, and to give them the service that is commensurate with that they gave to our country.

So thank you for your comments. Thank you for your conversation with the Clevelands', which I also had. I think that it is the best thing that we can do as a tribute to them and to others like them is to continue and speed up this process of modernizing a system that, as one of the previous witnesses said, we would not tolerate if it were our own health insurance.

In private business we have grown accustomed to a higher standard or quicker standard of technological resolution of these issues.

So institutional momentum being what it is, we are going to work together and move into the 21st century with both feet.

So if there are no further statements, no further questions, I thank you and all the panels. And this hearing stands adjourned.

[Whereupon, at 4:54 p.m., the Subcommittee was adjourned.]

A P P E N D I X

Prepared Statement of Hon. John J. Hall, Chairman, Subcommittee on Disability Assistance and Memorial Affairs

I would ask everyone to rise for the Pledge of Allegiance—flags are located in the front and in the rear of the room.

I would first like to thank the witnesses for coming today to appear before the Subcommittee. I know I speak for my colleagues when I say that we are all extremely frustrated and disappointed when we hear about 650,000 claims pending and another 147,000 appeals with a delay of 183 days to process those claims. But looking at this photograph of an 8 inch paper record held together with rubber bands and marked with post-it notes, it's hard to imagine that things don't get lost or missed. This has got to be cumbersome to process.

There is no doubt that we need a better system than rubber bands and post-it notes and must look beyond the current way VA is doing business. There are best practices within the scientific community and in use in the private sector. I thank you for joining me today to explore those solutions and to broaden our understanding of what is possible, realistic, and achievable in this technological age.

The current VA claims process is paper intensive, complex to understand, difficult to manage, and takes years to learn. Training a rater can take 2–3 years and many leave within 5 years. Experienced raters can adjudicate about three claims a day taking about 2–3 hours apiece. This means that if there are 10 people who can rate a claim and 800 claims are ready to rate, then it will take another 80 days to process those pending claims, which have already been in the system for several months. This is very labor intensive and in the meantime veterans are waiting months without compensation while their completed case sits on a shelf. I find that unacceptable.

Additionally, there have been reports by the GAO, the VA Inspector General, and the Institute for Defense Analyses (IDA) that explored the variances in ratings between the Regional Offices and the lack of inter-rater reliability. The Veterans' Disability Benefits Commission also found a great deal of subjectivity and inconsistency in the VA disability claims process.

So how do we solve this?

I've had a lifelong interest in science and was a three-time National Science Foundation scholar in High School and studied physics at Notre Dame. So, I find the topic of Artificial Intelligence—or AI—compelling since it requires the confluence of science, mathematics, engineering, and physics. In general, the purpose of AI is to make computer programs—or machines—that can solve problems and achieve goals. AI software increases speed, improves accuracy, and reduces costs for many industries and agencies. AI does not replace the human element, but rather facilitates its availability. There are great examples of AI in other areas, such as banking and medicine. For instance, the Veterans Health Administration relies on VistA to help doctors with diagnosis and treatment. It sends alerts when a patient needs a flu shot, cholesterol screening, or warns of potential drug interactions.

AI can be a decision support tool for adjudicating claims too. It could be used to organize and store data. It could match key words from a veteran's record to the criteria in the Rating Schedule. It could prioritize multiple disability issues.

I envision a VA in which a veteran can apply online for benefits, upload records, exams, and other certificates, which are prioritized and classified by an expert system that can match the data to the Rating Schedule criteria and shorten the time it takes to generate a claim. The electronic template used by the examiner could be associated with the Rating Schedule, which could also calculate ratings. Classifiers or key words could easily be matched by the computer to the Rating Schedule, such as if "Arm," "Amputation," then "90 percent."

This would free up the time for Regional Office employees to deal with the more complicated issues and assist veterans and their families with their problems. This Subcommittee has often heard that veterans don't know about or understand their

benefits, and that transitioning servicemembers are not getting all of the support that they need from the VBA. In this way, VBA staff could be providing more outreach and ensuring that veterans understand their entitlements and eligibility requirements for other such programs as Vocational Rehabilitation, insurance, and special monthly compensation.

I am eager to hear testimony today that will open up the discussion on information technology and share ideas that can improve rating efficiency, quality, and accuracy while reducing inconsistencies and variances in decisions for our disabled veterans who are waiting on a claim determination.

I look forward to working with Ranking Member Lamborn and the Members of this Subcommittee in finding real solutions that will vastly improve the VA claims process. It is unconscionable that veterans are waiting as long as they are for their earned benefits and that must end.

Prepared Statement of Hon. Doug Lamborn, Ranking Republican Member, Subcommittee on Disability Assistance and Memorial Affairs

Thank you Mr. Chairman for yielding. I would like to welcome all of our witnesses to the Subcommittee's first hearing of the second session.

I want to commend you Mr. Chairman for your leadership and bipartisanship in the previous session and I look forward to working with you and your staff to find meaningful solutions to improving the VBA claims processing system and reducing VBA's disability claims backlog.

I am excited that our topic of discussion today is the use of artificial intelligence to improve the disability claims process.

As you know Mr. Chairman, this is an idea that my colleagues and I on this side of the aisle have long supported.

Whether it was in our FY08 views and estimates, or two bills that I introduced last session, H.R. 1864 and H.R. 3047, we believe that one way to truly reduce the current backlog and prevent future backlogs is to propel VA beyond a 20th century paper-based processing system.

VA must create a system where all claims are electronically scanned and rating board members have access to computerized interactive tools to assist them in the adjudicative process.

Hopefully the new system will lead to more accurate rating decisions that are delivered to our Nation's veterans in a timely manner.

While I envision an important role for artificial intelligence in the decisionmaking process, I also concur with our witnesses who will attest that this technology should not, and will not, ever completely replace claims adjudicators.

A few weeks ago, staff from both sides of the aisle attended a briefing where VBA laid out plans to move forward with such a system and I am excited to learn more about those plans today.

This Subcommittee must ensure that this new initiative is fully funded and completed with the speed and attentiveness that our veterans deserve.

I am glad that we have representatives from both the private and academic sectors here with us today.

It is my hope that they will be able to help VA develop some of the options that are currently available in the private sector.

While I understand that VA has a very large and unique disability claim system, there are similar systems out there and I would hope that VA would look at these systems before they re-invent the wheel.

We must improve this system so heroes like Gunnery Sergeant Cleveland do not have to wait several years to have their claim adjudicated correctly.

Mr. Chairman I extend my thanks to you and your staff for holding this hearing this afternoon and I look forward to hearing the testimony of our witnesses. I yield back the balance of my time.

Prepared Statement of Gunnery Sergeant Tai Cleveland, USMC (Ret.), Dumfries, VA (Disabled Veteran)

TAI: Mr. Chairman, Ranking Member Lamborn, distinguished Members of the Committee, thank you for the opportunity to testify before you today regarding my experiences with the Department of Veterans Affairs (VA) claims process. My name is Gunnery Sergeant Tai Cleveland (USMC, Ret.). With me today are my wife Robin and my children, Brittiney and Rudi. My other son, Tai Jr. could not be with us

today. With your permission, as Robin has most often dealt with the VA on our benefits and claims issues, I have asked her to deliver our testimony.

ROBIN: Thank you, Mr. Chairman. My husband served his country proudly for 24 years as a United States Marine, and although we had many issues with the Department of Defense following his injuries, due to the subject of the hearing, I will limit my comments to our difficulties with the VA claims processing system and its impact on our family. As I am speaking, however, please keep in mind, that a severely injured servicemember must navigate multiple systems, the Department of Defense, the Social Security Administration, Medicare and the VA. It is quite overwhelming to say the least.

Tai was injured in August 2003 during a hand to hand combat training accident in Kuwait where he was flipped onto his back injuring his head and multiple vertebras. The resulting damage has left my husband a paraplegic with chronic neuropathic pain, spasticity and what is classified as a mild to moderate Traumatic Brain Injury that has its own set of challenges.

Since Tai's injury I have had to learn the hard way how to navigate the systems; keeping meticulous records of documents, recording dates and times of telephone calls, and confirming receipt of anything sent or hand delivered to Federal agencies. As such, I thought the best way to convey our situation was to share a timeline detailing our experiences with the VA.

In June 2005 we attended the Transition Assistance Program (TAP) class, provided by the Marine Corps and the VA to learn about the available options. We completed the VA's Benefits Delivery at Discharge (BDD) process—including the benefits, specially adaptive housing, and adaptive vehicle program applications—and hand-delivered it with medical records, MRI compact discs, films, prescription reports, etc., to 1722 I Street, Washington, DC.

After having completed his compensation and pension exam, we called the VA Benefits number at 1–800–827–1000 in November of 2005 and were advised that the application was incomplete and medical records from the Military Treatment Facility were needed. I delivered a second copy of MTF medical records to the DC Office.

A month later, I again phoned VA Benefits to see if the records were received and was advised that no application was on file. I copied and redelivered the original application to DC Office.

In January 2006, I made another call to VA Benefits and was advised that the claim was being reviewed but that medical records were required to make a final determination. I AGAIN copied medical records and redelivered to DC Office. I was later told that the housing and vehicle grant were denied.

When I called in February of 2006, I was told that no determination could be made because Tai was still on active duty. Additionally, I was told that no claim was on file for housing or vehicle which are allowed while on active duty. We reapplied.

In March of 2006, I met with a VA employee at Walter Reed regarding benefits and our difficulty with the claim. She introduced us to a VA social worker at Walter Reed who enrolled Tai in the Adaptive Driving Program at the Richmond VA. We were told to reapply for benefits because no applications were found. We resubmitted the original application and completed a new application for Specially Adaptive Housing, HISA, and Vehicle Grant, but were informed on April 5 that the applications were denied and advised to reapply yet again.

In June 2006 we were informed by the VA social worker that approval for the vehicle application was received but she was, "unable to locate our application because the clerk failed to separate application and keep an in-house copy." In addition our HISA and Adaptive housing grants were denied. We reapplied.

Everything was quiet for the next 3 months until October 26, 2006 when we were advised to reapply for vehicle/housing grants since no official notification of approval was received.

Again in November of 2006 we received verbal notification from the VA Rep at WRAMC of the latest vehicle and housing denial, and on December 13, 2006, we were advised to reapply for vehicle and housing grants and were contacted by VA to verify our address.

In January of 2007, Tai was medically retired from the Marine Corps and after filing BDD, we assumed we would get his disability check within a month or so.

In February of 2007, our housing and vehicle grants were approved, and had supposedly been approved since April of 2006, but the hardcopy was no longer on file. To date, we have still not received an official vehicle approval.

In late May 2007 we received verbal notification from the VSO helping us at the time that the VA was indicating that there was not enough information on file to rate the claim, and, therefore, additional information was necessary.

In June, we received notification from the VA of an 80% partial rating. We were advised that the rating was temporary and additional information was necessary in order to process the claim. As we were scheduled to be in Richmond shortly to obtain an adaptive cycle, we were advised to have Richmond perform the necessary evaluation for submittal to the Roanoke Regional Office. While at Richmond, I also inquired about obtaining a vehicle grant hardcopy and contacted the VA to inquire about Aid & Attendance. I was told that I was not eligible.

In July 2007 we delivered, via express mail, Tai's medical records from Richmond to Roanoke and sent the VA an email advising that we still had not received a disability check approximately 6 months post-discharge.

In August I phoned and emailed VA Benefits again and told them that despite the temporary rating, we still had no check. I requested direct deposit information and requested to verify our address.

After having been contacted about our problems by a non-profit organization, a concerned representative from the VA's Central Office called in September about the outstanding checks and we were told that a tracer would have to be placed on the missing checks before replacements could be issued. I later received a call from the Roanoke office and was advised that replacement checks were going to be issued.

On October 4, 2007, a VA Representative told us that claim was being expedited and should be completed by the 14th. We were informed on the 14th and the 30th that the updated medical report still had not been received. However, on October 29 we began to receive the replacement checks for the temporary rating.

At this point in the timeline it is important to note that our family had now been without our full disability compensation and benefits for almost 11 months. Our college-aged children were forced to withdraw from school, and the overall financial strain, frustration level and emotional toll—in addition to the actual injury—were crushing.

Finally, on January 7, 2008, after the intervention of Mr. Hall's Subcommittee and the Wounded Warrior Project, we received a final rating and back payment totaling thousands of dollars.

As you can see we filed and re-filed, submitted and resubmitted, medical records, claims forms, applications, and so on, but no one seemed to be able to track anything, placing additional burdens on an already overwhelmed family. In our case, only after the intervention of a Congressional Office and a non-profit organization were we able to get the benefits Tai had earned. This process should not be this hard.

Today, almost four years later, while we still have a few things to resolve with our rating and benefits, our family is trying to move on. Many people have stepped in to help from government agencies to Congressional offices to non-profit organizations. I am planning to return to work and school. Our children are returning to school, and Tai is enrolled in a media careers program for veterans in Chairman Filner's district. He has been a noted leader in the program and, ever the Gunny, has even spoken to the Wounded Warrior Project about being a peer mentor.

However, our purpose in coming here is not only to tell you our story, but also to let you know that we are not alone. People we know have had similar problems, and we know there are more out there. We are hoping that our presence here will help you understand the obstacles faced by the wounded and their families and inspire all involved to work together to improve the efficiency of this vital system for the benefit of those who sacrificed so much for their country.

Thank you and I look forward to answering any questions you may have.

Prepared Statement of John Roberts, National Service Director, Wounded Warrior Project

Mr. Chairman, Ranking Member Lamborn, distinguished Members of the Committee, thank you for the opportunity to testify before you today regarding the use of technology to improve the efficiency of the Department of Veterans Affairs claims process. My name is John Roberts, and I am the National Service Director for the Wounded Warrior Project (WWP), a non-profit, non-partisan organization dedicated to assisting the men and women of the United States Armed Forces who have been injured during the current conflicts around the world. As a result of our direct, daily contact with these wounded warriors, we have a unique perspective on their needs

and the obstacles they face as they attempt to transition and reintegrate into their communities.

In addition to my experience with WWP in general and the Cleveland's specifically, I am a service-connected veteran, a former veterans service officer, and was most recently a supervisor with the Houston VA Regional Office where I reviewed claims and became familiar with a number of significant deficiencies within the system.

In order to fully appreciate the problem, it is important to understand how the system currently operates. Despite recent advances in technology common to most businesses, the Veterans Benefits Administration (VBA) claims processing system is still dependent on a paper system. Although the VBA can now view electronic health records transmitted from the Veterans Health Administration (VHA), the ratings team is still required to print the records and place them in the veteran claims folder, which are then reviewed page by page by a Rating Veterans Service Representative.

The current model of the VBA claims processing system has a total of six separate teams and often, but not always, includes another team that is dedicated to processing only the OIF/OEF cases. The six main teams are as follows:

- **Triage** which handles the incoming claims, evidence, and is charged with maintaining the outdated file cabinet system, which stores the hard copy paper claims files
- **Pre-Determination** which is charged with the initial development of all claims for service connected disability.
- **Rating** is responsible for reviewing all available evidence and determining if disabilities are service related. If so, the percentage of disability assigned.
- **Post Determination** is responsible for inputting awards and generating notification letters to the claimants.
- **Appeals** maintains all pending appeals submitted by the claimants.
- **Public Contact** is charged with the general phone calls and questions and conducting one-on-one interviews with the veterans, dependents and survivors.

Files must be hand carried to each of the teams, and any member of these teams has access to the records at any given time.

Despite the number of people with access and the ease with which a file may be misplaced, VBA has only one way to locate a claim file once it is removed from the filing cabinet. An electronic system called COVERS is available, but is only effective if utilized by the individual employee. Rather than having access to the file through electronic means, COVERS requires manual input to identify a specific location or individual. If this is not done, it is a very time consuming task to locate one file among all the files that are in the processing system. For example, in the Houston Regional Office (RO), there are approximately 200 employees and each person could have up to 30 files or more on his/her desk.

Another challenge is the outdated filing system used to store the thousands of active files warehoused either at or near each Regional Office. If a File Clerk or any employee for that matter is not paying attention and misfiles a claims folder into the wrong cabinet or drawer, it again becomes a very time consuming and difficult task to check each and every drawer to locate the missing file.

The Triage team at each RO is also responsible for the intake of all new claims and all evidence submitted by each and every claimant. If the file is not easily located, it is placed on search within the COVERS system, until the file can be located. Because there are so many teams within the claims processing system, a particular file could be located within any of the teams at given time. This allows for the human error factor, which is often why the numerous pieces of vital evidence are often lost or misplaced and cannot be associated with the appropriate claim folder.

If a file cannot be located and all avenues have been exhausted to locate the file, the RO will then take action to rebuild the folder from scratch. This means that all prior evidence and claims submitted by the claimant are also lost. The responsibility to replace the missing evidence or claims is placed on the claimant. The VA will ask the claimant to submit any copies that he/she may have in their possession.

In addition, due to the current war on terrorism, VBA is faced with another challenge. The new challenge is trying to obtain records from National Guard and Reserve units. Active duty forces obviously do not file a claim until released from service. Once demobilized a member of the Reserve or National Guard component is eligible to file such a claim. If reactivated, however, the Reservist's claim is halted and he/she takes the medical file with them to the theater.

There is also the large backlog of records requests to the Records Management Center which houses not only claim folders, but now receives all service medical

records for recently discharged servicemen. Think of this as a large warehouse of nothing but paper files and an inadequate staff to locate each and every file or record that has been requested by Regional Offices across the country.

Another significant issue which can be identified at every Regional Office around the country is the varying levels of experience with the Rating Veterans Service Representatives (RVSR). In any given case, you could take five individual RVSRs and give them the same file and come up with five different opinions on how the case should be rated. Although there have been improvements with the implementation of RBA 2000, the current electronic system utilized to rate compensation claims, the system is far from perfect. The overall ratings decision including service connection and actual percentage is left up to the interpretation of the individual RVSR. The gap in varying decisions nationwide can also be attributed to local policy at each individual Regional Office. While this has been the case for many years, the issue has come to a head due to the increased frequency with which this generation of veterans speak to each other and compare their individual situations.

Mr. Chairman, unfortunately, these are only a few of the issues that surround a paper-based system, and situations like that of the Cleveland's are not unique. Many working groups, Government Accountability Office reports, and commissions have made recommendations on this topic. Most recently, the Veterans Disability Benefits Commission suggested that claims cycle times and accuracy could be improved by "establishing a simplified and expedited process for well-documented claims, using best business practices and maximum feasible use of information technology." While the availability of well-trained, customer service minded employees cannot be overvalued, the implementation of recommendations such as these can help to greatly reduce the complexity of the claims processing system and result in timely results.

WWP looks forward to working with you and the VA to try to resolve these problems. Thank you again for the opportunity to testify today, and I will be happy to answer any questions you may have.

Prepared Statement of Tom M. Mitchell, Ph.D., E. Fredkin Professor and Chair, Machine Learning Department, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA

Executive Summary

Claims processing at the Veterans Benefits Administration appears to be amenable to a variety of improvements through the introduction of more computerized operations, including the adoption of artificial intelligence (AI) technologies for rule-based processing, case-based reasoning, and data mining.

In the commercial sector, insurance claims are routinely processed online and automatically—Highmark, for example, processes over 90% of its insurance claims for hospital and physician services automatically, with no human intervention.

To pick an example familiar to many, commercial software for filing income taxes (e.g., TurboTax) illustrates how computerization can improve accuracy, convenience and adherence to regulations when filling out complex forms and applying complex regulations automatically.

The VA should be able to obtain similar benefits by computerizing its processing of claims. Much of this benefit can be achieved by applying well-understood computerized decision-support technologies that are already in widespread use in the commercial sector. Additional benefits may accrue from more advanced technologies that can be adopted once claims are captured and managed online.

More specifically, three types of improvements to VA claims processing can be expected to follow from the adoption of online claims processing:

1. Shifting from pencil and paper claims to online claims can *improve the accuracy, efficiency and convenience to veterans* in filing and tracking their claims.
2. Introducing computer software to help interpret these online claims can *improve the productivity of human claims processors, and the consistency and fairness of benefits awarded* by (a) automating the more mundane and tedious steps in claims processing, and (b) informing human claims processors of benefits guidelines, typical awards, and similar past cases relevant to the claim they are evaluating.
3. Capturing the claims and their processing online provides additional opportunities for *continuous and ongoing improvements to benefits processing,* including (a) the use of data mining methods to predict and to flag new claims that are "outliers" likely to require collecting additional information, require special-

ized expertise for processing, etc., (b) the use of data mining methods to identify veterans who are not filing for benefits they should take advantage of given their condition, and to encourage them to seek these benefits, and (c) the use of historical claims and their disposition to help train newly hired claims processors.

Full Testimony

Chairman Hall, and distinguished members of the committee:

It is an honor to be asked to testify today, and to try to help you improve the situation faced by the brave men and women of our armed forces who have given so much on behalf of us all.

My name is Tom M. Mitchell. I have been involved in the field of artificial intelligence for over 30 years, and am currently a Professor in the School of Computer Science at Carnegie Mellon University, and Chairman of the Machine Learning Department. While I can be considered an expert in computer science and artificial intelligence, I have no direct experience with the processing of veterans' benefits by the VA. Therefore, my comments should be interpreted as those of a technology expert who is not intimately familiar with the VA's claims processing system.

The Problem and the Opportunity

That said, it is my understanding that we face a problem in the processing of benefits claims by the VA. I am told that the process of collecting and processing claims is primarily a manual, paper-based process in which 19 page claims forms are handwritten, and evaluated manually by claims processors. I am aware that there is an optional web interface at the Department of Veterans Affairs website for entering claims online, but that claims processing nevertheless remains primarily manual. I understand that in some cases delays of many months have occurred while veterans await the decision of the VA, and that recent increases in the number of claims have caused serious backlogs in processing, leading to undue hardships for our veterans.

In my opinion, we have the technology we need to address and eliminate this problem.

If we can develop computer software such as TurboTax, which guides taxpayers as they fill out complex tax forms online, and which then provides them with instant, computer based application of complex tax regulations to calculate to the penny the taxes they owe, then I see no reason why we cannot develop similar software to automate online filing of VA benefits claims and to automate a substantial fraction of the processing of these claims.

To get even closer to the nature of the problem faced by the VA, consider current practices for processing medical claims in the insurance industry. The Senior Vice President for Health Plan Operations at Highmark Inc., which is a major provider of health care insurance in my own state of Pennsylvania, informs me that over 90% of the insurance claims they receive for hospital and physician services are processed fully by computer, with no human intervention.

How do they do it? The insurance claim form is received electronically, and uses industry standard ICD9 codes to describe the hospital and physician services performed for the patient. The patient's eligibility is first checked automatically, by consulting a database describing which patients carry which benefits plans, and determining which policy was in force on the date the service was performed. The claim is then processed to determine the payment due, based on a combination of medical policy requirements, benefits already received by this patient, the specifics of their insurance plan, and the detailed information in the online claim form. In essence, the software is able to decide on the payment due because it contains a large collection of rules, each one specifying the payment to be made in some very specific case, defined by the details of the patient's policy, treatment, and history. The complex policy for determining what payment is due under which condition is encoded in these rules inside the computer. Once the software determines the payment due, the payment is issued automatically, and a record is added to the database to record this new bit of patient history—both the claim that was filed, and the outcome of the claim processing. Later, this database is used in a number of ways that further assist the patient and the insurance company. For example, by data mining the database, it is possible to detect that certain patients with chronic medical problems are not filing claims for medical treatments they should be receiving. In this case, Highmark can contact the patient to encourage them to seek this medical care. Highmark and other insurance companies have achieved great improvements in efficiency and effectiveness of claims processing by capturing the claims and the benefits policies online, and by automating the process of applying the policy to the claim.

Can the VA do the same? While the type of benefits claims processed by the VA might not be identical to those processed at Highmark and other medical insurers, the two are sufficiently similar that one must conclude online processing will be of considerable value to the VA. A thorough analysis is needed to determine exactly which aspects of the VA claims processing are, in fact, amenable to computer automation, and which aspects require human judgment. I recommend that this analysis be performed immediately, and that a report be written that describes each step in the VA processing workflow, assessing the feasibility of automating or semi-automating each step. For those steps where human decision making is required, it may be the case that computer support for human claims processors could improve their effectiveness and efficiency, and this should also be examined in the report.

Relevant Computational and Artificial Intelligence Technologies

Processing of online benefits claims may be improved by adopting a variety of well-tested computer technologies, including several artificial intelligence technologies that are routinely used today to support human decision makers. These technologies have been used, for example, to improve efficiency and effectiveness of medical claims processing in industry, to provide interactive support to workers in call centers who must gather information from customers and guide them to a solution, and to improve efficiency of filing and processing income taxes. All of these applications, like processing of VA benefits, involve collecting information from an individual and then making a decision based on a complex, predefined policy. Some of the key technologies used in practice in these and similar systems include:

1. *Rule based decision aids.* Rule-based software systems are widely used to encode expertise so that computers can apply this expertise automatically to assist in decision making. Rules are written in an "IF–THEN" format. For example, one fragment of the VA policy for evaluating claims can be captured in the following rule: "IF there has been more than one episode of acute congestive heart failure in the past year, AND no chronic congestive heart failure THEN assign a disability rating of 60." Although described here in English, such rules are easily encoded in a computer language, then automatically applied to data on a benefits form. The VA benefits processing policy described in its "Schedule for Rating Disabilities" is described primarily as a very large collection of such rules.
2. *Case-based reasoning systems.* Case-based reasoning systems provide help to human decision makers such as call center personnel, by providing them rapidly with historical cases similar to the one they are currently processing, to help guide them as they process this new case. In the portion of benefits processing that requires human subjective judgments to evaluate the level of disability, it may well be helpful to the claims officer to examine the most similar past claims, as well as the judgments made in those cases. Case based reasoning is a technology that can quickly locate and deliver the relevant past cases from a database containing hundreds of thousands of historical cases, allowing it to act as an automated assistant to the human decision maker.
3. *Machine learning and data mining.* Machine learning algorithms and data mining systems that apply them to large databases are often able to discover important statistical regularities in the data that may not be apparent to a person. For example, large historical databases of credit card transactions are routinely mined to determine the features that indicate which future credit card transactions are likely to be fraudulent. In the VA claims database, data mining might be used to discover the pattern of features that indicate a claim will require additional information from the filer of the claim, or that a particular type of medical expertise will be required to evaluate it, or too, that the person filing the claim should also seek a particular additional preventative treatment. Data mining methods are widely used for applications where large numbers of historical records are available for computer analysis, from medical outcomes analysis, to telephone fraud detection, to targeted marketing to customers.
4. *Methods for analyzing text and other unstructured data.* Automated processing of information in forms is easiest if the fields in the form contain well-structured values (e.g., gender is either male or female, age is always a number). When a field in a form contains unstructured text (e.g., the description of how you were injured), automated processing is much more difficult because computers obviously cannot understand arbitrary sentences. Nevertheless, computer algorithms are able to extract some structured information from text, such as identifying names, dates, and locations that appear in the text. In some cases, this ability to extract certain types of structured data from text can transform the data into a form more amenable to automated processing.

Technically, one can envision developing an approach for the VA in a sequence of stages. The first stage is to get claims online, so that they can be easily tracked and accessed. The second is to use well-understood approaches to automating the easy steps in decision making (e.g., rule-based methods), and to provide interactive decision support to human claims processors when they must be involved (e.g., using case based methods to suggest relevant past cases for comparison and guidance). A third stage is to data mine the claims databases to analyze to improve claims processing, and to provide better service to veterans filing claims.

Conclusions and Recommendations

In applications from insurance claims processing to tax filing to customer help centers, there is a growing and widespread use of computer-based tools to capture forms online, and to automate some or all aspects of processing these forms. The VA should take advantage of this well-developed computer technology, to move its own benefits processing online, in order to gain a number of likely benefits including:

1. Shifting from pencil and paper claims to online claims can *improve the accuracy, efficiency and convenience to veterans* as they file and track the processing of their claims.
2. Introducing computer software to help interpret these online claims can *improve the productivity of human claims processors, and the consistency and fairness of benefits awarded* by (a) automating the more mundane and tedious steps in claims processing, and (b) presenting claims processors with the past claims that are most similar to the one they are currently processing, to help guide their analysis.
3. Capturing the claims and their processing online provides additional opportunities for *continuous and ongoing improvements to benefits processing,* including (a) the use of data mining methods to predict and to flag new claims that are "outliers" likely to require collecting additional information, require specialized expertise for processing, etc., (b) the use of data mining methods to identify veterans who are not filing for benefits they should take advantage of given their condition, and to encourage them to seek these benefits, and (c) the use of historical claims and their disposition to help train newly hired claims processors.

Given the urgency of addressing current backlogs in processing VA benefits claims, the VA should mount an aggressive effort to move its benefits processing online. Three specific steps can be performed in parallel to move rapidly toward this goal:

1. Begin immediately a process to move all VA benefits claims forms into an online database, and to maintain the status of claims processing and its final disposition. This will be useful for managing and tracking claims even before processing of claims is automated.
2. Conduct a detailed study of the workflow process used by the VA to evaluate benefits claims, producing a report that describes each step in the workflow, and whether and how this step can be automated. For workflow steps that require human subjective judgments, the study should describe how computer decision aids can provide support to the human.
3. Consult with large insurance companies and others who process benefits claims to understand current best practices and to begin a process of adopting them where appropriate.

Mr. Chairman, addressing the problem of effective and efficient processing of benefits claims does not require new technological breakthroughs—it requires the adoption of current best practices that are based on well-understood technologies. I hope my remarks are useful to your deliberations, and I thank you for the opportunity to present my views here today.

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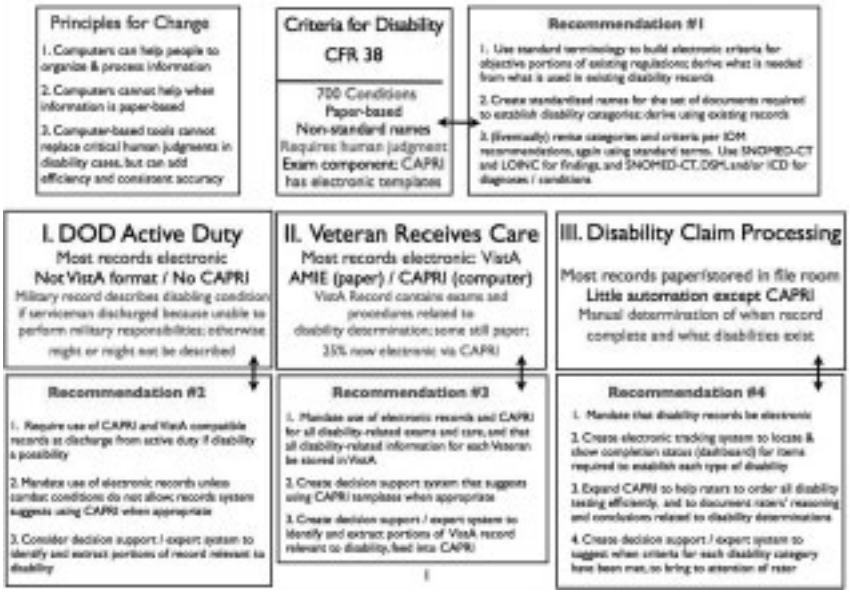
Prepared Statement of Randolph A. Miller, M.D., Donald A.B. and Mary M. Lindberg University Professor of Biomedical Informatics, Medicine, and Nursing, Vanderbilt University School of Medicine, Nashville, TN

Overview

1. My comments describe the applicability of Biomedical Informatics to improving the processes for determining Veterans' eligibility for disability compensation.
2. Clinical informatics involves information management and decision making during healthcare delivery. Expert systems, which utilize artificial intelligence techniques, represent a subset of the more general decision support techniques and electronic health record approaches that clinical informatics provides.
3. I generally endorse the findings of the June, 2007 Institute of Medicine Report, "A 21st Century System for Evaluating Veterans for Disability Benefits". That report lacks adequate detail in some areas pertinent to clinical informatics. I clarify below how informatics can make a difference.
4. Clinical informatics can improve both the speed and quality of disability determinations for U.S. Veterans. The highly acclaimed VistA and CAPRI systems developed by the Veterans Health Administration (VHA) and Veterans Benefits Administration (VBA) provide excellent examples of relevant clinical informatics applications. Future informatics efforts can help in five important areas by:
   a. converting paper-dependent processes to electronic processes for all stages of disability determination and designating VistA as the definitive repository for such information, with supporting software tools such as CAPRI available in whatever venues are appropriate;
   b. creating electronic definitions for each of the approximately 700 disability conditions, based on current CFR 38 definitions and amendments, that utilize standardized terminology for concepts and findings (e.g., the SNOMED–CT, LOINC, DSM, and ICD terminologies);
   c. creating a tracking system that captures electronically all information relevant to each Veteran's disability determination. The system would provide VBA raters with a checklist to determine what documents they require, a method to order necessary tests and procedures, and a dashboard to indicate the status of each document needed to complete a review. These would help raters to locate and retrieve the information efficiently, as well as to determine what information was incomplete or missing, and limit unnecessary duplicate/repeated testing that delays disability determinations and increases costs;
   d. creating decision support tools to identify and display disability-specific patient information to VBA raters in a manner that allows them to determine easily which disability criteria have been met or not met, and to recommend appropriate next actions electronically; and,
   e. creating a quality feedback loop using current information to evolve future practices through ongoing continuous improvement.
5. In matters as important as Veterans' disability determination, computer-based tools, including "expert systems", can serve as adjuncts to help humans to collect and manage information, but the tools cannot in any way replace the most important aspects of human judgment. Present and future computer-based tools will not displace the talented, experienced people who comprise the present VHA and VBA. Informatics can help people to work "smarter", in order to benefit Veterans.
6. A key lesson from clinical informatics is that while change can be beneficial, it can also be disruptive if employees must dramatically and abruptly alter their work processes. Whatever plan of action the government adopts to move from current state to a more ideal future, the plan must be pragmatic, and coordinated to proceed in concrete, non-disruptive steps. Each step must convey benefits and lay the foundation for subsequent steps with greater benefits. Changes must be gradual and familiar to already overburdened employees. This document describes such scenarios.

Figure 1 illustrates applicability of the above ideas and principles to various stages of disability determination: definition of disability, documenting conditions during active military duty, documentation of health and disability data within the Veterans Health Administration system; and, determination of disability status by VBA raters.

Figure 1: DOD/VHA/VBA current disability determination and proposed enhancements



I will describe the applicability of biomedical informatics to the task of improving the processes and workflows used to determine Veterans' eligibility for disability compensation. Clinical informatics involves information management and decision-making during healthcare delivery. Expert systems, which utilize artificial intelligence techniques, are a subset of the more general decision support techniques and electronic health record approaches that clinical informatics provides.

I would first like to place the role of computer-based decision support tools in proper perspective. As I detailed in 1990 in an article in the Journal of Medicine and Philosophy,[1] for matters as important as Veterans' disability determination, computer-based tools, including "expert systems", can serve as adjuncts to help humans to collect and manage information, but the tools cannot in any way replace the most important aspects of human judgment. If a patient grimaces and winces while struggling to walk across a room, and then claims, "I'm OK, doc", a compassionate human can correctly categorize the patient's condition, but an expert system is far less likely to do so if it only has "I'm OK, doc" as the patient description. Present and future computer-based tools will not displace the talented, experienced people who comprise the present VHA system. Nevertheless, the VHA system can achieve significant progress and efficiency through greater application of electronic information systems in determining and tracking Veterans' disability benefits. I generally endorse the findings of the June, 2007 Institute of Medicine Report, "A 21st Century System for Evaluating Veterans for Disability Benefits". That report lacks adequate detail in some areas pertinent to clinical informatics. I clarify below how informatics can make a difference. Clinical informatics can improve both the speed and quality of disability determinations for U.S. Veterans. The highly acclaimed VistA and CAPRI systems developed by the VHA provide excellent examples of relevant clinical informatics applications. I will refer to the principles and recommendations listed in Figure 1 and explain each.

PHASE ONE—BUILD INFRASTRUCTURE TO AUTOMATE STEPS OF EXISTING DISABILITY DETERMINATION SYSTEM, TO GAIN EFFICIENCY

The first task is to identify disability-related records and documents that exist now in paper format and to convert them, whenever possible, into a standardized, electronically processable format. As noted in Figure 1, Recommendation 1.2, this involves creating standardized names for all document types used in disability determination (there is already a history of being able to do so within certain segments of the VHA system—see, for example).[2] A review of a sufficient number of existing disability records (paper and electronic) used to establish (or deny) each dis-

ability category for hundreds to thousands of Veterans would help to create a complete list. Having specific names for each type of document makes it easier for VBA raters to find and manipulate them.

In changing to a more electronic disability determination system, one must be careful to convert almost all routine activities of VHA raters to being electronically based, with actions analogous to what they now do with paper. It would potentially be worse—more cumbersome and slower for disability determinations—if VBA raters had to use both paper and electronic record systems in processing a Veteran's application, than to use only one or the other system. If both paper and electronic systems were in active use, a VBA rater would always have to check both systems to see if "missing" items in one system are actually not "missing", but present in the second system.

The most straightforward way to begin conversion to electronic processing is to identify where paper records are currently generated, and where existing VHA software is applicable to creation of electronic versions of that paper-based information. For all other paper records that cannot be easily converted in this manner, the document naming system should be used to label them, and then they should be electronically scanned to create electronically retrievable records. Such record types should be scheduled for subsequent projects to capture them at their source—at time of generation—using future electronic capture tools analogous to CAPRI. The award-winning CAPRI system developed by the VHA provides templates that prompt physicians and other clinicians as they examine a patient for disability determination, and stores the information in a standard form within the VHA's VistA electronic medical record system. Recommendations 2.1, 2.2, 3.1, and 4.1 suggest that the DoD, the VHA healthcare providers, and the VHA disability raters rapidly move toward 100% utilization of the current version of CAPRI to capture disability-related information as it is generated, in all situations where CAPRI is applicable.

The next stage of utility for automated systems to enhance VBA raters' processing of disability claims would be, per Recommendation 1.1, to categorize the criteria required to establish each of the approximately 700 disability conditions specified in CFR 38 and its amendments.

To develop electronic criteria for each disability condition would require human review of the latest version of CFR 38 and amendments for each condition, and creating: (a) a list of findings, coded in SNOMED–CT or LOINC, required to be present to establish the disability, (b) a list of findings, coded in SNOMED–CT or LOINC required to be absent to establish the disability, (c) a list of findings that help to support the presence of the condition but which are not required to establish the condition, coded in SNOMED–CT or LOINC, (d) a list of the document types (using the standardized document names per Recommendation 1.2) that are relevant to determination of the specific disability condition, (e) the list of CAPRI frame identifiers that are relevant to determination of this specific disability, (f) names for each of the 700 conditions coded wherever possible in ICD, DSM, or SNOMED–CT, and (g) narrative text that describes the remaining criteria for the establishment of the specific disability condition that could not be coded in steps (a) through (c).

Once the electronic identifiers exist for information relevant to disability determination, including the CFR 38 definitions, the document names, the finding names, and the CAPRI template IDs, it is possible to create an electronic tracking system, per Recommendation 4.2, that can indicate for VBA raters which documents and findings are required to establish the disability, and what the status of each is for a given Veteran applying for disability. An electronic dashboard that displays the status and availability of each item of information could then be constructed. It is possible that aspects of the dashboard might be shared with the Veterans who apply for disability through the "my Health*e*Vet" web portal created by the VHA.

An adjunct to the above system would expand CAPRI to assist VBA raters in ordering the best tests and procedures to complete disability determination efficiently, and to record the reasoning and conclusions the VBA raters used to establish or deny the specific disability claim.

The recent Institute of Medicine report, "A 21st Century System for Evaluating Veterans for Disability Benefits" (National Academies of Science Press, 2007; Copyright © National Academy of Sciences. http://www.nap.edu/catalog/11885.html) recommends: "Recommendation 6–1. VA and the Department of Defense should conduct a comprehensive multidisciplinary medical, psychosocial, and vocational evaluation of each veteran applying for disability compensation at the time of service separation." This should initially be done using the CAPRI system in its current state, recording the results in a VistA compatible format for future reference at VHA and VBA.

The above-described steps are somewhat straightforward, and are within the reach of existing technology, although they require substantial effort in terms of sys-

tem development, security and confidentiality assurance, application testing, training of end users, and ongoing technical support. The steps essentially comprise a basic level of automation of the current disability determination process in a manner that will assist VBA raters in carrying out their work more efficiently. Once such an infrastructure is established, substantial enhancements could be made, some of which would involve simple decision support techniques, and others of which would involve machine learning and expert system approaches.

PHASE TWO—ENHANCE AUTOMATED INFRASTRUCTURE FOR DISABILITY DETERMINATION WITH DECISION SUPPORT FEATURES

A number of techniques developed over the past three decades for clinical decision support[3–10] are relevant to future enhancements to a VHA/VBA disability determination and documentation system. At the national level, the VHA has been a major contributor to clinical decision support through its evolution of the VistA electronic medical record system. In addition, many talented individuals working within the VHA and VBA have also made contributions.

One important technological approach is clinical diagnostic decision support systems,[3–6] which can be probabilistic (Bayesian), criterion-based, or heuristic ("artificial intelligence" expert systems)[3] in nature. In general, such systems take as input standardized vocabulary descriptors describing a patient's condition (such as history, physical examination, or laboratory findings) and produce as output a ranked list of possible diagnoses and a suggested approach to determining which diagnoses are present.

A second important "expert system" technique relevant to clinical informatics is natural language text processing.[8–10] Using a target vocabulary of defined clinical terms or concepts, such as provided by the U.S. National Library of Medicine's Unified Medical Language System Metathesaurus, or by the SNOMED–CT terminology system officially endorsed by the U.S. Government, such programs can scan a "free text" document, such as a clinical note, and identify which of the target concepts are present in the document.[9] The utility of such an approach for VBA disability determination has already been demonstrated by a pilot project to identify spinal injury related findings from free text disability exam records, and to correlate those findings with an electronic representation of the criteria used by VBA to determine disability.[10]

Finally, ad hoc or heuristic approaches can combine manual techniques with semi-automated approaches to characterize clinical domains or conditions.[11–12] Such approaches have been used to derive a standardized vocabulary for patients' problem lists from a large set of examples in free text,[11] and to attempt to convert information stored in disparate DoD and VHA clinical record systems from one representation format to the other.[12]

The recent Institute of Medicine report, "A 21st century System for Evaluating Veterans for Disability Benefits" (National Academies of Science Press, 2007; Copyright © National Academy of Sciences. http://www.nap.edu/catalog/11885.html) contained the following recommendations:

> "Recommendation 3–1. The purpose of the current veterans disability compensation program as stated in statute currently is to compensate for average impairment in earning capacity, that is, work disability. This is an unduly restrictive rationale for the program and is inconsistent with current models of disability. The veterans disability compensation program should compensate for three consequences of service-connected injuries and diseases: work disability, loss of ability to engage in usual life activities other than work, and loss in quality of life."
>
> "Recommendation 4–1. VA should immediately update the current Rating Schedule, beginning with those body systems that have gone the longest without a comprehensive update, and devise a system for keeping it up to date. VA should reestablish a disability advisory Committee to advise on changes in the Rating Schedule."
>
> "Recommendation 4–6. VA should determine the feasibility of compensating for loss of quality of life by developing a tool for measuring quality of life validly and reliably in the veteran population, conducting research on the extent to which the Rating Schedule already accounts for loss in quality of life, and if it does not, developing a procedure for evaluating and rating loss of quality of life of veterans with disabilities."

The effort to redefine the conditions for which disability compensation is appropriate should be standards-based (ICD, DSM, SNOMED–CT, LOINC) as described above. Text-mining and natural language processing methods could be used to determine which coded terms are currently used in disability determinations through re-

view of the thousands of existing electronic disabilty-related VistA and CAPRI records, and from samples of paper records converted by OCR or direct typing into electronic format. This review, coupled with the effort to extend disability criteria as recommended by the IOM Report, could result in computer-processable "criteria table" definitions for each disability condition that would maximize the objective representations of each condition (while still retaining free text if necessary to describe the aspects of human judgment required in each determination). As previously recommended, the list of document types and procedures relevant to determination of each disability category, as well as the orders required to carry out the procedures in VistA, could be added to an expanded revision of CAPRI.

Once the above representation scheme for each disability condition was in place, an expert system using the "criteria table" approach could be developed to assist VBA raters in determining the completion status of each disability determination, and added to a more advanced version of the previously mentioned dashboard system. The AI–RHEUM expert diagnostic system,[6] developed in part at the U.S. National Library of Medicine, might be used as a starting point for the proposed VHA/VBA expert system.

A similar system could be developed for use within the DoD electronic medical record system, which would employ natural language processing and expert criteria table methods to identify portions of an active duty service individual's record that would suggest eligibility for disability evaluations before discharge from active duty, per the IOM Report recommendation, "Recommendation 6–1. VA and the Department of Defense should conduct a comprehensive multidisciplinary medical, psychosocial, and vocational evaluation of each veteran applying for disability compensation at the time of service separation."

PHASE THREE—CREATE A QUALITY FEEDBACK PROCESS TO ENHANCE AND EVOLVE THE DISABILITY RATING PROCESS OVER TIME

The recent Institute of Medicine report, "A 21st Century System for Evaluating Veterans for Disability Benefits" (National Academies of Science Press; Copyright © National Academy of Sciences. http://www.nap.edu/catalog/11885.html) contained the following recommendations:

> "Recommendation 4–2. VA should regularly conduct research on the ability of the Rating Schedule to predict actual loss in earnings. The accuracy of the Rating Schedule to predict such losses should be evaluated using the criteria of horizontal and vertical equity."
>
> "Recommendation 4–3. VA should conduct research to determine if inclusion of factors in addition to medical impairment, such as age, education, and work experience, improves the ability of the Rating Schedule to predict actual losses in earnings."
>
> "Recommendation 4–4. VA should regularly use the results from research on the ability of the Rating Schedule to predict actual losses in earnings to revise the rating system, either by changing the rating criteria in the Rating Schedule or by adjusting the amounts of compensation associated with each rating degree."
>
> "Recommendation 5–1. VA should develop a process for periodic updating of the disability examination worksheets. This process should be part of, or closely linked to, the process recommended above for updating and revising the Schedule for Rating Disabilities. There should be input from the disability advisory committee recommended above (see Recommendation 4–1)."
>
> "Recommendation 5–3. VA should establish a recurring assessment of the substantive quality and consistency, or inter-rater reliability, of examinations performed with the templates and, if the assessment ends problems, take steps to improve quality and consistency, for example, by revising the templates, changing the training, or adjusting the performance standards for examiners."

Once a fully electronic system was available that both represented criteria for disability determination electronically, and which recorded individual Veteran's records in standardized terminologies, text mining and machine learning techniques could be used to accomplish the above-mentioned IOM objectives, and to provide feedback for quality-based evolution of the proposed systems.

BACKGROUND INFORMATION

My own background is that I trained and became Board-certified in Internal Medicine during the 1970s. For over a quarter century, I cared for inpatients and outpatients in academic settings, including in several VHA Hospitals and Clinics. My research over the past three decades has been in the area of clinical informatics. I was the founding Chief of the Section of Medical Informatics at the University of

Pittsburgh, and the founding Chair of the Department of Biomedical Informatics at Vanderbilt. For more than two decades, I helped to develop and evaluate expert systems for medical diagnosis at the University of Pittsburgh. After moving to Vanderbilt in 1994, I helped to develop clinical decision support tools implemented within Vanderbilt's homegrown care provider order entry (CPOE) system. That CPOE system improves quality of care, safety, and cost-effectiveness by giving advice to physicians in real-time as they care for patients.

During my career, I have been Principal Investigator on over $20 million of Federal grants and contracts related to biomedical informatics. I am currently a member of the Institute of Medicine of the National Academies of Science. I am a Past President of the American Medical Informatics Association (AMIA) and a Past President of the American College of Medical Informatics (ACMI). I currently serve as Editor-in-Chief of the Journal of the American Medical Informatics Association (JAMIA). Two of the clinical informatics systems that I helped to design and build have been disseminated commercially. My comments above have no direct relationship to those commercialization efforts, and I have no conflicts of interest in that regard.

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Prepared Statement of Marjie Shahani, M.D., Senior Vice President, Operations, QTC Management, Inc., Diamond Bar, CA

Mr. Chairman, Members of the Subcommittee, thank you for the opportunity to testify before you today on this important topic of claims processing. QTC is a nationwide, private provider of medical examination and medical record services to the medical and disability communities, including Federal, state and local government agencies; property and casualty insurance carriers; third-party administrators; employers—and the claimants they serve. With 580 highly trained employees located at five strategically placed regional administrative offices, 35 owned and operated medical facilities in seven states, and more than 12,000 pre-screened medical professionals, QTC has produced more than 2.5 million quality medical exams and reports over the past ten years and pioneered software and technology to ensure quality,

timely, customer-focused and cost effective services for our clients throughout our 25 years of experience.

QTC Experience with VBA C&P Process

QTC has been a provider of C&P examinations to the Veterans Benefits Administration (VBA) since 1998. QTC provides medical examinations to veterans and active duty servicemembers seeking compensation from the VBA in 12 VA Regional Offices (VAROs) and 40 Department of Defense (DoD) Benefits Discharge Determination (BDD) sites around the country. After completing the medical exam, QTC provides a detailed narrative report according to the guidelines of the VA's Automated Medical Information Exchange (AMIE) worksheets. VA's rating specialists then use this information along with the veteran's claim file, or c-file, to adjudicate the veteran's claims. Supporting the VBA for the past nine years has provided QTC with an in-depth understanding of the complexity of the activities, nuances and uniqueness of the VA medical disability examination process, as well as its challenges.

QTC Developed Software Applications to Support the C&P Process

QTC has applied its experience and expertise in developing knowledge-based tools and technology, not as the company's primary purpose, but to facilitate and streamline the work of QTC's medical professionals and support staff.

Specifically for veterans' C&P medical examinations, QTC has developed:

- A Client Portal—an Internet-based application specifically designed and written for VA Central Office, VAROs, and DoD. This application provides VA and DoD with online access to the status of each case and appointment details along with the exam results, including the narrative report and diagnostic test results, and provides the ability to review the progress of any case, review management reports, case summaries and perform a batch report download from a secured Internet connection.
- A Protocol Engine—A medical exam protocol engine, or software, that synthesizes multiple VA required AMIE worksheets with portions of the VA rating schedule (38 CFR, Part 4) into one veteran specific medical examination form, thereby providing examiners with a single head-to-toe examination. It organizes the VA requirements into a form that assures the physician will address each and every medically claimed condition for each veteran. This software generates a specific exam protocol based on VA AMIE worksheets and the veteran's claimed conditions, and it allows for immediate updating to conform to VA statutory, regulatory and medical changes and quick dissemination to all providers nationwide.

A Logical Next Step—Organize the Evidence

Secondary to our nine years of experience working with VA, we acknowledge the complex challenges of the VA medical disability process—it is like no other disability program we have worked with previously. In an attempt to provide value-added services, QTC applied its knowledge and experience to the next step in the C&P process—specifically simplifying and streamlining the information gathering process for the rating specialists so that they are able to rate the veteran's claim in a quality, timely, customer-focused and cost-effective manner.

QTC developed an Evidence Organizer (patent-pending)—a working prototype that is an automated rating tool designed to assist the VA rating specialist and significantly reduce the time to determine a rating decision. The Evidence Organizer has great potential to help rating specialists search and find relevant information needed to determine and rate claims and thus help the VBA facilitate the process of adjudicating each claim.

Current Rating Process Productivity and Challenges

The rating process begins when a veteran files a claim. The VA Triage Team identifies the type of disability claim. Then the VA Pre-Determination Team determines the need for additional information, such as a medical examination, and gathers the additional records. Once all the evidence is gathered, the Rating Team reviews the entire contents of the c-file and rates the veteran's claim, determining entitlement to benefits and the degree of disability. The Evidence Organizer was designed to assist the rating specialist in their process of reviewing the entire contents of the c-file and to assist them in making that final decision.

Currently, the VA goal for each rating specialist is to rate an average of 3–4 cases per day. In 2006, QTC interviewed experienced claims examiners and asked them to break down the process and allocate time for each step in the rating process, as-

suming seven claimed conditions. The four steps of the rating process and allotted times were:

1. Initial review of the c-file: 20 minutes.
2. Linking the evidence in the file to the claimed conditions: 85 minutes.
3. Determining the severity of the condition and if each is service connected: 40 minutes.
4. Writing the rating decision: 65 minutes.

The total time to examine a veteran's claim is 210 minutes or 3.5 hours. It becomes evident that a rating specialist cannot meet a target of 3–4 cases per day in one 8-hour workday. In fact, the actual average number of cases a rating specialist can process in one day is 2–3 cases.

In 2007, based on QTC's data, the average number of conditions claimed per veteran was four for C&P cases and eight for BDD cases. Examples of multiple-claimed conditions include left knee pain, asthma, low back strain, foot fungus, hearing loss, and depression. Additionally, reopened claims now account for 54% of all open cases, and cases are being reopened with additional unclaimed secondary conditions, such as hypertension, headaches, or scars.[1]

The biggest challenge the rating specialist faces is finding the medical evidence in the veteran's paper files supporting the claimed conditions and linking the evidence to the appropriate rating code as listed in the 38 CFR, Part 4. QTC's Evidence Organizer would eliminate this challenge, allowing the rating specialist to more efficiently make the rating determinations. The Evidence Organizer accomplishes this by creating an organized electronic c-file, providing the rating specialist the ability to quickly search and review all available evidence at the click of a mouse. The rating specialist no longer needs to review the entire c-file over and over again for each claim they are rating as the Evidence Organizer has organized all the available evidence for them.

Potential Impact

The Evidence Organizer decreases the decision time to rate veterans claims from 3.5 hours to 2.2 hours, a time savings of 37% per decision, increasing the number of veterans' cases rated from 2 per day to 3 per day. On an annual basis this would increase the number of claims decisions per rating specialist to 711 from the current 533, an increase of 178 decisions per rating specialist or a 33% increase.

Evidence Organizer Process

The Evidence Organizer can be applied to all four steps in the rating process, decreasing time spent per case file by organizing and highlighting all medically related information. The Evidence Organizer works by converting the cumbersome paper-based claim file (c-file) to create an electronic record or file (e-file). This document management process begins with a Technician scanning in the c-file and other hand written documents through the use of Optical Character Recognition. The software transforms each record into a text searchable digital record. As additional records become available they are also integrated into the e-file. At the heart of this process is QTC's core knowledge database, which is built upon our extensive disability examination experience supporting the VBA C&P examinations.

The knowledge database identifies, highlights and electronically indexes all keywords and claimed conditions, for example: diabetes, asthma, arthritis, as well as any potential claimable conditions throughout each record, thereby providing the rating specialist with all possible claimable conditions. Once the e-file has been established, each record is reviewed to validate the software's indexing, creating an initial table of contents for the e-file.

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[1] Statement of Mr. Ronald R. Aument before the House Committee on Veterans' Affairs, March 13, 2007.

The next step involves a Reviewer validating the highlighted records and linking the referenced medical evidence to the VA rating requirements in 38 CFR, Part 4. PDF scanned records not compatible with electronic screening methods (handwritten records) are reviewed page-by-page by the Reviewer and relevant information is highlighted, extracted, and digitally indexed and linked to the rating criteria appropriate for the claimed condition or potentially claimable condition. Once all the records have been reviewed the software creates a full and complete e-file with a table of contents listing all claimed conditions.

Finally, the complete annotated e-file is electronically available for the VA rating specialist to review and assist in their rating decision process. The software suite allows the VA rating specialist to:

- Review and search each and every document at the click of a mouse.
- Review all tagged, annotated and associated data.
- Add the rating specialist's determination of relevance with rationale electronically.
- Identify, tag and index additional information as desired.
- Document the rating decision made with the referenced evidence.
- Review any additional potentially claimable conditions

Summary

By applying new technologies such as the Evidence Organizer, the VBA could:

- Organize medical evidence.
- Reduce routine and repetitive tasks.
- Increase accuracy by facilitating cross-referencing.
- Link the rating criteria with the clinical annotation.
- Scan, index and review all medical records.

Also, The Evidence Organizer will potentially complement RBA–200 or other existing VBA software and serve as a training tool. With the current challenges the VBA is experiencing in claims processing, the application of this technology is essential to improving performance and efficiently providing veterans with accurate ratings.

Prepared Statement of Ned M. Hunter,
President and Chief Executive Officer, Stratizon Corporation,
Atlanta, GA, (VA State Pilot Study)

Chairman Hall, Ranking Member Lamborn, and distinguished Members of the Committee, thank you for the opportunity to appear before you today.

Stratizon Corporation is a veteran owned Software-as-a-Service company, which has utilized the concepts of artificial intelligence to successfully design a software platform and application solely focused on improving the VA's claims processing system.

We have gained valuable insight into the underlying success of using AI to solve the VA's claims processing system. First, the technology available in the marketplace is adaptable, flexible, scalable, proven, and cost-effective. Technology is not to be resisted but embraced. Second, success will be highly dependent upon the *perspective* in which AI solutions are constructed. A true veteran-centric solution must be constructed through the eyes and situation of the veteran to satisfy the requirements of the state and Federal policies and VA systems *and not* constructed through the eyes of the multiple government entities to independently present the bureaucracy to the veteran.

Stratizon applied this perspective in successfully piloting for the U.S. Navy, three unique web-based "intelligent" solutions that demonstrated how the quality of life for sailors could be significantly improved by replacing confusing, complicated, paper intensive, and manually driven enterprise processes with web-based, easy-to-use, automated, and complete self-service solutions, or what we define as "intelligent user interfaces" or "IUIs". "IUIs" can also be designed for numerous veteran events such as transitions from active to veteran status or applications and appeals for VA compensation and health benefits.

The Commonwealth of Virginia's Department of Veteran Services, working with the Joint Leadership Council of Virginia representing 32 veteran service organizations, is implementing such a solution called TurboVet™. Building on a successful pilot in 2007, the Governor of Virginia has included funds in his FY 09 budget that begins on July 1, 2008, for full production. TurboVet™ will provide Virginia veterans, or an authorized representative, the ability to log online at Virginia.gov, via

a personal computer or device such as this Apple IPhone, and select an event they need assistance with. Initially a series of statements and questions regarding their status or particular event will be presented. Their personal data currently on file with the state will be retrieved so they may confirm or validate their data, thus improving data integrity and eliminating redundant data entry. The system will use embedded decision logic to react intelligently to their input to continually refresh and display only the necessary event questions, thus eliminating the frustration of redundant and unnecessary questions. A list will be displayed of all state and Federal benefits the veteran has earned with all corresponding documents spanning multiple agencies required for the veteran to submit, thus providing a peace of mind to the veteran their solution is holistic. Each document will then be progressively, simultaneously, and perfectly auto-populated with the proper data, thus eliminating data transcriptions errors and numerous processing delays. Finally, the veteran will have the option to save and print each document locally and, at their discretion, electronically submit their data securely to all participating authorities and systems to be processed and tracked fully and completely.

Virginia's success in using an AI platform is dependent upon the continued support and cooperation of all parties, both political and technical. Decisionmakers need to remain committed to this paradigm shift to the future and must always provide the best institutional knowledge available to ensure the TurboVet™ IUI™ not only becomes that benchmark of service but also remains the benchmark. We need technical cooperation between state agencies to take advantage of TurboVet™'s ability to seamlessly exchange data with disparate IT systems. We need cooperation and support at the Federal level. Federal supervisors in Roanoke have projected that a minimum of 100 days of processing time will be eliminated when the TurboVet system is implemented at only the state level. Stratizon foresees few problems in exchanging data between TurboVet™ and VA systems such as VistA and VetsNet. We fervently believe there could be significant process cycle time improvement and extraordinary cost savings at the state and Federal level if veteran's data at the state level could first be "pre-verified" against recognized "authoritative" national VA databases and then seamlessly exchanged upon claims submission and during the claims management process. Virginia's goal is to fulfill the vision of H.R. 3047 and have a claim prepared properly with attached medical evidence and documentation for electronic submission to Federal adjudicators for rating, and have those claims calculated fairly, consistently, and automatically.

In summary, using a properly designed AI system would dramatically improve the VA claims processing systems by improving the access to customer solution and service for veterans and their family members, reducing the costs to the state in staff administration, training, and paperwork, and improving the accuracy, throughput, and expediency of claim submissions by the state for VA adjudication.

On behalf of the Stratizon Corporation, I would like to thank the Chairman and all committee members for this opportunity to be here today.

In today's world the gathering, administration and management of employee data has become a serious issue for corporate America. In particular, when an employee is confronted with a business or personal life event, the employee is required to provide sensitive personal data to his or her employer or to corroborate the data the employer already has on file for the employee. The employer, on the other hand, is under great pressure and exposure to liability to process the event and the data surrounding it swiftly, correctly, confidentially and completely. In most cases, the individual providing the data and the organization processing the data waste an extraordinary amount of time and energy ensuring all personal data associated with the event is properly, accurately and securely processed.

For the individual, incorrect data processing can mean endless hours of wasted time, frustration, and even financial loss. For the organization, incorrect data processing means significant and unnecessary overhead expense due to decreased business productivity and additional time and materials to correct data errors and to account for lost data. Ultimately, the corporate liability for improperly or poorly managing the business or personal life event for the employee is an unacceptable business risk which can harm the employee/employer relationship and damage the reputation of the organization.

The solution for this challenge is for enterprises to migrate from enterprise employer centric solutions to customer employee centric solutions through the use of open-standards web-based XML technology and artificial intelligence concepts. Stratizon Corporation has engaged this vision and has developed an open-standards

J2EE technology platform that creates software applications to display on-screen an Intelligent User Interface (IUI™).

An Intelligent User Interface (IUI™) is an online series of questions, consolidated from all the questions from a variety and multitude of forms and applications pertaining to a specific business or life event, and embedded with decision logic encapsulating the major life event, to manage the event for the user by intelligently responding to that user's input. In conjunction with accessing and utilizing the user's data stored in the enterprise in multiple and disparate systems, a complete picture materializes for the use and a total solution is rendered.

The process begins when a user logs onto a website or access device such as an Apple IPhone and selects a button that describes the personal event they are confronted with. The IUI™ firsts presents the data the organization *has* on file for the user and allows the user to confirm or change the information. The IUI™ then presents a series of questions regarding the event to gather the required missing data the organization *needs* from the user so the organization can process the event for the user and the organization

This allows the IUI™ to quickly complete all steps of the event process, auto-populate all required documents with the option to print or digitally sign, and send the data to the enterprise in the proper format to process the event. The result is a life event processed simply, correctly and completely. The benefits are the reduction in human frustration, elimination of paper, event processing time and administrative data management costs for both the user and the organization.

These customized intelligent user interfaces become the "edge of the enterprise," presenting a less bureaucratic image, providing a less bureaucratic process to match, and providing several advantages.

First, there is a remarked improvement in end user satisfaction and customer service because solutions have been engineered with a focus on intelligence event solutions and not just intelligent document solutions. It is more about the data than the document. This innovative approach to user-centric design significantly reduces user frustration and costs by more efficiently and cost effectively integrating, delivering and managing the entire process and the requisite data, forms and documents required from end users.

Second, an AI platform delivers better collective "time to value" for end users and organizations because it is sophisticated yet simple in its presentation. By designing a solution from an end user's "holistic event" perspective versus an enterprise's "silo-driven" perspective, we ensure an event is managed with 100% completeness for the user and the enterprise.

Third, an open standards XML platform has better flexibility in working with existing corporate systems. Today's data systems need to integrate with multiple web servers, application servers and database server architectures and seamlessly integrate into an organization's portal strategy. For the enterprise, this means lower cost, easier scalability, and faster development and delivery of a solution.

In summary, an open standards XML artificial intelligent platform provides a powerful development environment for rapidly developing and deploying electronically enabled intelligent user interface applications to provide the following benefits:

Consumer/Family Benefits

- Improves end user productivity and morale
- Reduces the pain associated with life-event related paperwork
- Eliminates difficult searches across multiple Web sites and departments
- Reduces need for forms
- Ensures the proper data is completed and submitted accurately and timely
- Improves end user satisfaction with organization service and support

Organization Benefits

- Streamlines data and forms processing via the web
- Establishes a consistent interface for all forms-based events
- Reduces administrative costs of providing service
- Reduces training costs of customer support and service personnel
- Reduces personnel time to manage forms inventory and life event packets
- Reduces redundant data entry by customer support and service personnel
- Improves data integrity for the organization information technology systems
- Reduces process cycle-times
- Reduces process re-work through increased data integrity
- Provides workflow capabilities
- Reduces cost of maintaining and handling supply of paper forms

Prepared Statement of John F. McGarry, Senior Vice President of Benefits, Chief Risk Officer, Unum, Portland, ME

Mr. Chairman, members of the Committee, I'd like to thank you for the opportunity to testify before you today. My name is Jack McGarry and I am the Senior Vice President of Benefits and Chief Risk Officer at Unum.

I am here today to discuss how our technology facilitates claim management (case management) decisions at Unum.

We process approximately 400,000 disability claims per year and pay about $4 billion in benefits directly to our insureds and their families. Most of Unum's claims are governed by ERISA, the Federal law which generally requires insurance companies to make disability claim decisions within 45 days. Unum's experience shows that it is possible to manage high volumes of claims in a timely and accurate manner while achieving high levels of customer satisfaction. In fact, 93% of our customers report that they are satisfied with the overall quality of contact with Unum. Ninety-six percent are satisfied with our timeliness and ability to respond to their questions. And 97% find us courteous and respectful.

Technology is an important component of the solution to managing the volumes and timeframes, as well as our customer service. However, the decision about a person's ability to work is also informed by in-depth analysis of pertinent documents and discussions with claimants, their employers and their physicians in order to assess their ability and motivation to work.

In the end, the disability determination is a judgment call that needs to be made by people.

In order to assure that the right people are reviewing the right claims at the right time, a combination of Unum's technology and people is necessary. For example, a routine claim may be automatically sent by the system to one person while a complex claim with multiple diagnoses may go to another based on a combination of systems and management decisionmaking. As robust as our systems are, a person does look at every claim we pay.

Our technology, operated by our people, does the following:

- Manages documents
- Facilitates workflow
- Ensures a complete administrative record, and
- Monitors and measures quality and service results

1. First, our system manages documents. Our files can grow to hundreds—if not thousands—of pages. With our image-based system: All files are paperless, multiple people can access the same claim at the same time, and documents are organized and stored in an efficient manner. This reduces redundancies in workload management. For example a nurse, a claim payer and a vocational rehabilitation specialist can all be working on the same file at the same time—even if these people are located in different parts of the country.

   Another efficiency of the system is that our paperless files can be viewed all at once or electronically "tabbed" in different ways—for example, all the medical data can be viewed using a medical view of the file. This creates efficiency in that if a doctor needs to review a file, she is able to view the relevant medical data, and does not have to review data unrelated to the medical condition unless necessary. The file can be viewed using multiple other tabs—for example, the letters can be viewed, financial data, or vocational information. Thus, the technology frees our people to view only the data pertaining to the issue they are working on—allowing each claim payer to focus on critical case management activities.
2. Second, our system facilitates workflow. All information is electronically scanned into our system upon receipt. The act of scanning documents as they are received creates an online activity for the claim payer to review. In our system, every action a person completes creates another action or follow-up activity. The system can also trigger an action for someone to review claims and/or contact customers at key times during the claim management process.

   This technology allows for activities and discussion to be focused on ongoing claim management. With real time access to information, our team focuses on the document review and discussion needed to facilitate next steps on the claim instead of recapping redundant data or gathering additional information that may not add value to the process. Real time access involves multiple users being able to access and update the claim file at the same time (parallel claim processing). It also means that as documents are received via mail or fax and scanned into the system, they are immediately viewable by all involved in the claim. For example, a doctor may be writing a report at the same time a claim

payer is checking whether the claimant is contractually eligible for benefits—the moment the doctor completes her report, the claim payer would be able to see it in the image based system and begin working on the medical case as well.

The image based claim management system also contains a letter-writing function and a letter library so that a claim payer can write to claimants and their doctors. Addresses populate automatically, saving the claim payer time. Also, the claim payer can set follow-up activities so the claims stay on track. An example of a follow-up activity may be that the claim payer sets an automatic reminder for the system to let the claim payer know whether requested data has arrived after a certain number of days.

3. Third, our system ensures a complete administrative record. An administrative record is important for ERISA purposes as well as sound claim management. When a claim changes hands between claim payers, all of the management activities associated with that claim—including future activities—stay with the claim and are automatically assigned to the new claim payer. The technology keeps the file together in one place and minimizes any disruption in service due to a personnel change. Thus, if a file does change hands, many redundant steps in getting a new person up to speed on the file and setting direction are eliminated.
4. Fourth, our system enables us to monitor and measure quality and service results. Management and our Quality Assurance process require the ability to review files "real time"—at the same time that the claim payer is working on the files. The system automatically tracks and reports our service times and outcomes.

   Because each one of the activities the claim payer does is scheduled and tracked, we can ensure that the right resources are applied to the right claims at the right time. Thus, our management and Quality Assurance teams can provide feedback as the claims are being managed—as opposed to days, weeks or months later.

We separate levels of disability into those which have shorter durations—what we call Short Term Disability (STD—6 months or less in duration)—and those which may be longer term—what we call Long Term Disability (LTD—may last greater than 6 months)—based on a number of factors—including experience of the claim payer and diagnosis.

At the initial level, for the shorter terms claims: Our in-take department reviews each new claim and assigns an ICD–9 (International Code of Diagnostics 9) diagnosis code. We use the ICD–9 system because it is a standardized system within the medical community. Using a standardized system avoids confusion and makes it easy and efficient to communicate with the claimant's medical team about the condition and treatment recommendations.

Thus, when a claim is filed, we use a quick assessment—a triage-type process—to assess the case based on the employee's diagnosis and other relevant criteria. Our operating standard for short term claims is that at least 95% of our claims have been paid, denied or pended—with the status and reason communicated to the claimant—within 5 days of our receipt of a complete claim.

Long term claims are more complex and as a result require more extensive investigation and skilled resources. Most of these claims take longer than 5 days to assess. Thus, the system assigns claims to a manager based on certain criteria and the manager gives different numbers of claims to people based on data elements including diagnosis and the expertise of the claim payer.

For all claims, we may gather information from multiple sources including the claimant, the employer, the claimant's medical team and our own medical and vocational resources. There is continuous communication throughout this process.

After the initial assignment, our technology initiates reports based on key measures—including diagnosis, generally accepted medical duration guidelines, and our Unum database information. These reports can identify claims that need additional work or follow-up, and help each claim payer to determine what steps to take next.

Let's take a look at how a hypothetical claim may work through the process. As news reports have widely documented that many veterans suffer from behavioral health issues, I will use an example involving a claimant with depression.

In the behavioral health context, our experience shows it is critical for the well-being of the insured that the benefit specialist/case manager be proactive and get involved in helping the claimant return to functionality quickly. Speed, accuracy and quality are critical, not only for the health and well-being of the claimant, but, as previously mentioned, because most of our claims are governed by ERISA, which among other things requires private sector insurance companies to make disability

claim decisions within 45 days. While there are some provisions which do grant additional time under specific circumstances, generally speaking we must make our decisions within 45 days.

On the complex behavioral health claim example, on Day One our Intake Department would set up the claim on the image based system and scan the documents into the electronic file.

On Day Two the system assigns the claim to a claim payer based on the ICD–9 code and other criteria.

On days three through five, having access to the file, the claim payer reviews the specific facts of the claim, including checking contractual eligibility and determining whether a decision can be made. A decision to pay could be made, for example, if the person is hospitalized in an in-patient setting.

If more data is needed, the claim is pended and the claimant is kept informed of the status. A claim may be pended if relevant medical information has not been received yet. When that information is received, a decision is reached by the claim payer or by the claim payer working with the appropriate clinician or resources through what we call our "roundtable process," which would include physicians, managers, and vocational rehabilitation consultants.

In our example, after payment has begun, our system is designed to proactively identify claims for further attention based on a number of triggers. If the system identifies these triggers—for example it may identify a claimant with depression that is either approaching or passing the timeframe in which recovery would be expected—it schedules a claim management activity so the right person reviews the file on the date specified and can initiate or delegate the appropriate activity. The triggers may be identified based on this claimant's diagnosis and our own duration management database. The activity may be for a Unum nurse to call and work with the claimant, for example, ensuring the claimant is getting the appropriate treatment needed for recovery.

If the claimant's symptoms are still acute at the six week mark, we would continue to pay and work with the claimant and the insured's medical team. On an ongoing basis we would stay in regular contact with the insured and make sure we understand the continued nature and severity of the condition.

At around the 60-day mark, the claim would be transitioned to a different claim payer with more in-depth expertise and training in managing complex claims. This claim payer would again keep in regular contact with the insured, and would continue to work closely with medical and vocational resources. If the claimant were hospitalized or had suffered a severe injury—the claim may be sent to an extended duration unit, where follow up would be less frequent.

During this phase the following steps could occur:

- continued evaluation of the claimant's functional ability, which could include setting up an independent medical examination;
- in depth assessment of the physical and cognitive occupational demands of the insured's occupation or other occupations they may be suited to perform;
- vocational assistance, determining any possible accommodations that could be made so the person can return to work; and
- continued partnership with in-house medical, vocational and management resources as needed.

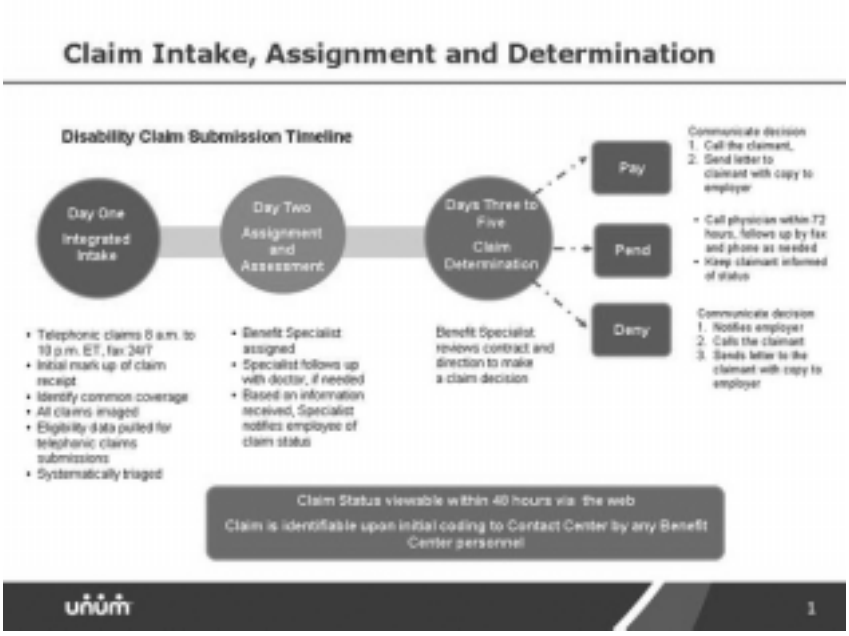
In summary, the critical data elements associated with specific claims are identified in short and long term situations and our benefit specialists and/or nurses are able to focus on the right activity at the critical time.

Ultimately, technology can facilitate claims handling processes and decisionmaking by helping ensure that the documents are being reviewed by the right people at the right time. It can also provide cost savings. We estimate that since we implemented this system we have saved 10–20 per cent over the previous system. More importantly, it has increased claim management effectiveness and allowed us to pay claims more accurately.

In the end, however, it is the skill of the management and the people handling the claims, supported by those working with them, who are responsible for the claim and service to our customers. Through the time savings and other efficiencies created by technology, each claim handler is freed to devote more time to interact directly with claimants and their physicians in building a plan and assessing a person's ability to return to work.

Disabilities present a complex management challenge because they are logistically difficult, judgment based and can be emotionally charged. Technology can help facilitate judgment based decisionmaking but we don't see it as ever being able to replace people in the claim management process.

I would like to end by extending an invitation to all of you and for VA staff to visit Unum and would welcome the opportunity to continue to be a resource for sharing best practices between the public and private sectors as you continue to evaluate the disability adjudication/case management process. Thank you for the opportunity to testify before the Committee.



unum

Better Benefits at Work

July 30, 2007

Agenda

8:00	Welcome and Introductions HO3 Reception/Atrium	U.S. Rep. Mike Michaud, Deputy Chief of Staff John Graham, Jr., Donna Mundy, Laura Beckmann, Sandy Cook, Cheryl Greaney, Pam Castrucci-Saunders, Tim Smith & Doug Brown
8:15	Benefits Center Presentation Dirigo Room	Laura Beckmann, Sandy Cook, Cheryl Greaney, Pamela Castrucci-Saunders, Tim Smith & Doug Brown
8:45	Benefits Center Tour	Laura Beckmann, Sandy Cook, Tim Smith, Doug Brown, Tammie Turner, Joy Saltzman & Chris Plamondon
9:30	Reception, Dirigo Room	Kevin McCarthy, Joe Foley, Eileen Farrar, Barbara Furey, Jack McGarry, Donna Mundy, Laura Beckmann, Sandy Cook, Cheryl Greaney, Pam Castrucci-Saunders, Tim Smith, Doug Brown, Tammie Turner, Joy Saltzman, Chris Plamondon

Our leadership position today

	Rank	Market Share
Long term disability income protection[1]	1	24%
Short term disability income protection[2]	1	19%
Individual income protection[3]	1	31%
Group life[4]	3	7%
Group long term care[5]	1	76%
Supplemental benefits[6]	2	14%

Nearly 21 million covered employees[7]

30 years as the industry leader in group and individual income protection[8]

Providing benefits for more than 40% of the Fortune 500[9]

More than 100,000 employer customers[10]

Service-focused contact center

85%
of calls are managed without holding or transferring

- Monday – Friday, 8 a.m. – 11p.m. ET
- Spanish language assistance available
- Nearly 300 highly-trained employees
- 33-point quality assurance program
- 4.5 million calls received each year
- 80% of calls answered within 20 seconds
- Less than 5% call abandonment rate

A real person is always available to offer assistance to your employees, allowing the disability benefit specialist to focus on the deeper issues of each claim.

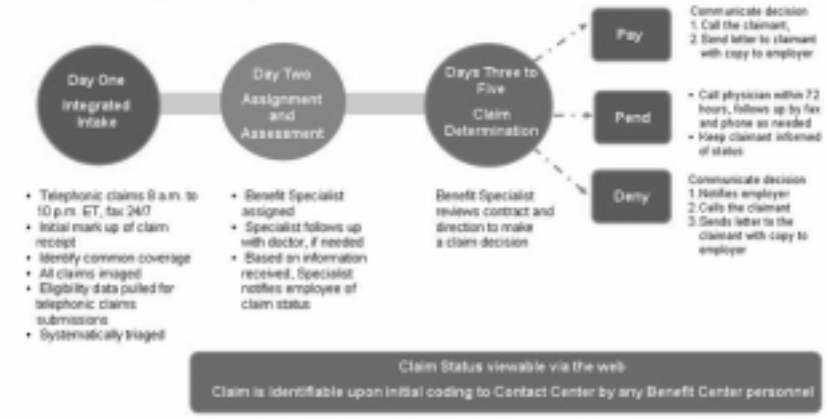
Technology provides a single point of coordination

Technology provides a single point of coordination and enables the team to efficiently:

- Manage workloads
- Assign tasks
- Review all claim documents
- Schedule follow-up calls, letters or activities
- Request file reviews
- Communicate easily and clearly between the team members
- Tap expertise in other locations
- Work from remote locations
- Access management views

Claim Intake, Assignment and Determination

Disability Claim Submission Timeline



Claim Status viewable via the web
Claim is identifiable upon initial coding to Contact Center by any Benefit Center personnel

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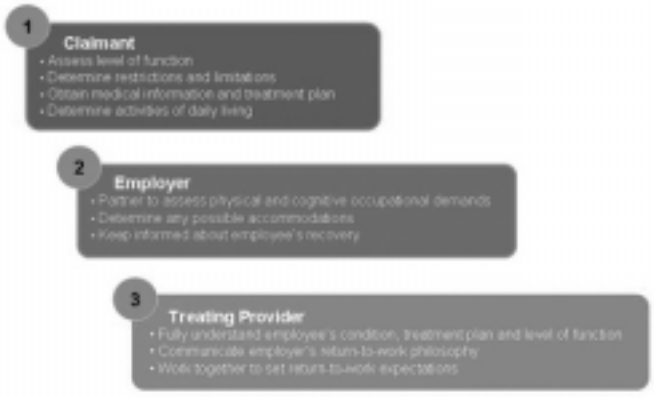
Managing Claim Duration

3 Steps to Managing Claims Duration



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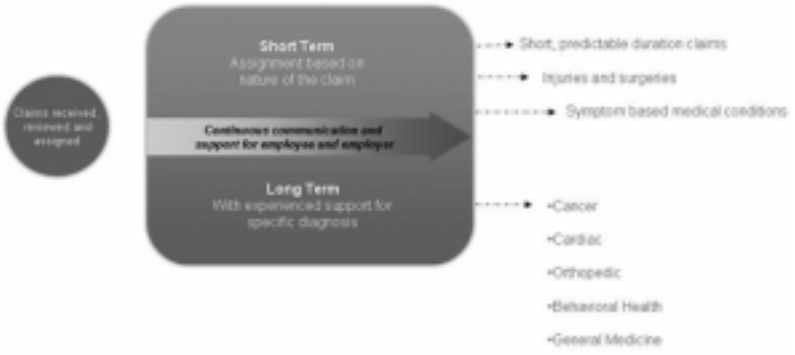
Expert claims evaluation and management

Increasing levels of clinical and vocational resource intervention depending on claim complexity and diagnosis



Experienced people and leading technology

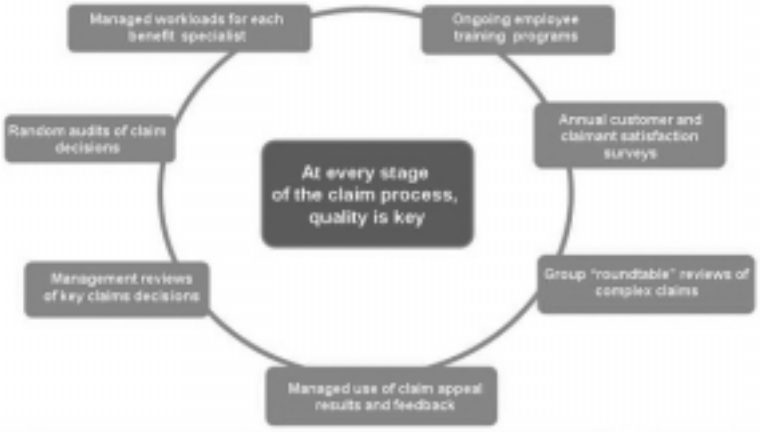
Each benefit specialist has access to a variety of expert resources for specific needs

Leveraging Expert Resources:

- In-unit consultations
- Online referrals
- Roundtable discussions
- Complex conditions are automatically pulled for clinical review.
- Clinical resources (RNs and physicians available) review files not only from their expertise but to identify other resources that could assist the claim.
- Partner with clinical team to help employees return to work or to independent living

Quality assurance

We employ a variety of quality assurance and continuous improvement methods



Appeals Workflow

- **Appeals Intake is consistent with other types of claims**
- **Triage and assignment of appeals to specialist within 2 business days**
- **Acknowledgement letter sent to claimant and employer within 3 business days of receipt**
- **Status update to claimant every 30 days until appeal determination is communicated**
- **Monthly random appeal file reviews conducted by appeals management of completed appeal decisions to ensure quality, consistency and timeliness of decisions**

Benefit Center model

A unique focus . . .

- Service delivery distinguished by experienced people and leading technology
- Claims management approach that applies the most appropriate resources to each claim
- Best-in-class decision-making supported by expert resources with an emphasis on quality

. . . resulting in appropriate solutions.

Sources and disclosures: Corporate Overview

Our leadership position today

1-3 JHA 2005 U.S. Group and Individual Disability Market Surveys, 2006.
4 LIMRA 2005 Annual Group Life Sales and In-Force Survey, 2006.
5 LIMRA 2006 Group LTC Report, 2007, based on cases and lives inforce.
6 U.S. Worksite Study Carrier Results for 2005, Eastbridge Consulting Group, Inc., 2006.
7 Unum internal data, 2007.
8 JHA U.S. Group and Individual Disability Market Surveys, 1997-2006. Ranked #1 in disability income protection for the 21 years prior to 1997 by the annual survey of the Employee Benefits Research Institute (EBRI).
9 Based on Fortune magazine list published in April 2005, and Unum internal data, 2005.
10 Unum internal data, 2007.

Prepared Statement of Gary A. Christopherson, University Park, MD (Former Senior Advisor to the Under Secretary for Health and Chief Information Officer, Veterans Health Administration, U.S. Department of Veterans Affairs, and Former Principal Deputy Assistant Secretary for Health Affairs, U.S. Department of Defense)

Chairman Hall and Mr. Lamborn, let me applaud you for holding these hearings on substantially improving the claims processing systems and greatly improving how we care for our Nation's veterans. Today's hearing, "The Use of Artificial Intelligence to Improve the VA's Claims Processing System" is very important in its own right but more so in how it supports the overall effort toward a truly caring, timely and effective processing of our veterans' disability claims.

In my testimony today, I will be speaking both to the true meaning and obligation of "the duty to assist" and to the strong enabling role that artificial intelligence and other decision support tools can and should play. I will point to the fact that, in the military where our veterans served, great honor is given to those who deliver "on time and on target".

Why do I believe this is so important? I saw the sacrifice of our servicemembers and the incurred debt by our Nation when I had the honor of serving as the Principal Deputy Assistant Secretary of Defense for Health Affairs. I saw and helped achieve the great potential that the Military Health System has for truly caring for our servicemembers, our retirees and their families.

Subsequently, I saw the plight of many of our veterans and the great obligation of our Nation when I had the honor of serving as the Veterans Health Administration Chief Information Officer and Senior Advisor to the Under Secretary for Health. I saw and helped achieve the great potential that the Veterans Health System has for truly caring for our veterans. In this latter role, I also had the opportunity to work with the Veterans Benefits Administration as they explored the potential for a much better claims processing system.

Most importantly, I had the great privilege of getting to know both servicemembers and veterans as people providing a great service to our Nation. I had the opportunity to work closely with organizations supporting active servicemembers, the Guard, the Reserve, retirees, veterans and their families.

All this taught me that what the Department of Veterans Affairs can and should be doing is about the veteran and that everything VA does should be centered around the veteran. VA should be a truly veteran-centric system, including its claims processing system. This is not about claims per se, it is about a veteran who needs the support of the Nation that he or she served.

This is about strong leadership. This is about effective management end-to-end. This is about deploying effective technology. Most importantly, this is about a new process that honorably discharges more of our obligation and delivers benefits on time and on target to our veterans.

A New Claims Processing System

Let me start with the claims processing system. If we believe that veterans are hurting, that we have "the duty to assist", and that we should meet the expectation of being "on time and on target", then we need a new process now. My suggestions for one such proposal and its rationale are detailed in the footnote at the end of my statement.[1]

Several years ago, I had the opportunity to help advise the veterans benefits system in its thinking about a new system. I asked them how many hours of work it takes to process a claim. They said about eight hours on average. Sadly, this means it takes six months to a year or more to complete eight hours actual work. That makes no sense.

What does make sense is a new system operating in real time like we do with the health care system. When a veteran is hurting and needs health care, the veterans' health system assists the veteran and provides care quickly. When a veteran is hurting and needs financial benefits, the veterans' benefits system does little to assist, forces the veteran to navigate a large bureaucracy and massive paperwork, and provides financial benefits only after months or years.

VA staff should come out and welcome the veteran. They should actively assist the veteran to get everything processed quickly and correctly. They should be working with the veteran on an ongoing basis as case managers.

But we also need the continuing support and assistance of the Veterans Service Organizations. They have played an invaluable role over the years in trying to support the veteran in a broken system.

Changing the process means giving a veteran the financial benefit at least as soon as the veteran files a claim with basic evidence supporting that claim. Real time

would mean that VA would receive the claim and supporting evidence and make the decision on the same day. That is achievable if we really want to make it happen.

Let's change the assumptions. Let's have VA presume that a veteran filing a claim with basic evidence supporting that claim is entitled to the associated benefit a) for the period of one year or b) until VA completes the processing of that claim [no more than one year], whichever is shorter. Further, let's have VA begin payments to a veteran within 30 days of that veteran filing a claim with the supporting evidence.

But let's also have the VA claims processing system function better. Within six months, let's have VA institute a new claims processing system that proactively assists a veteran with his/her claim. Let's have them produce a temporary or permanent decision (preferred) within two weeks of a veteran filing a claim with basic evidence supporting that claim. And, let's begin payments to a veteran within 30 days of that veteran filing a claim with the supporting evidence. Further, preferably within six months, let's have VA deliver the permanent decision within two weeks.

This can be done. It should be done.

Enabling Technology

In my colleagues' testimony, we have heard that the technology exists today to greatly improve the speed and accuracy of benefits decisions. Using artificial intelligence or electronic decision support tools is nothing new. Both government and the private sector use them every day.

For those who argue benefit claims processing is a much more complicated and difficult process, I counter that it is not. If you want to go to the most complicated and difficult process that exists today, it is arguably health care. Yet, somehow health care has figured out how to provide care in real time without technology and even better with technology.

One doesn't even have to go outside the VA system to find real time systems. The veterans' health care system is just that. Much praise has been given to the veterans' health system for its responsiveness, quality and effective use of technology. Today, the veterans' health care system can access any electronic information in any VA health care site in real time. With due diligence, this will be even better in the future. One of my honors was to have both rescued the VistA health information system and to have set it on the path to an even brighter future.

To help improve the claims processing system, we even went one step further. We made the veterans health care information available to the claims processing system electronically and in real time. Unfortunately, it doesn't seemed to have sped up claims processing.

Artificial intelligence and human intelligence together can make a difference. Using health care as an example, we have some of the most highly trained people in the world providing health care. More and more we are using less highly trained people as well. More and more, these talented people rely upon many kinds of decision support tools to help them be effective. They have real time access to virtually everything there is to know about a person that can help improve health. More and more, they have real time access to the most current knowledge on any particular condition and on caring for the whole person. They are supported by guidelines and advice on what best will help a person get healthier.

Sometimes they treat even without full information if that is what it takes to reduce the misery now. Sometimes they have to gather information from other physicians across town or across the country. Sometimes, more often now than in the past, they have all the information they need to treat within their own health information system. VA's VistA and the future Health*e*Vet VistA do just that. Many public and private sector health care providers' health information systems do just that.

These health care providers have the decision support necessary to care for a person in real time. They don't have to wait months or years to make decisions on how to treat the person in misery today. The person doesn't have to wait months or years to get help with their misery.

But, keep in mind that health care did not wait for technology; it just got better with technology as an enabler. Technology can greatly enable the claims processing system, but it is only an enabler. For better claims processing, we don't have to wait for the technology. We can start reducing the misery today and then do it even better when the technology arrives.

Leadership and Management

However, getting to a new, veteran-centric, effective claims processing system with the necessary enabling technology will only happen if VA leadership is fully committed. This is not going to be easy, but it is doable.

VA leadership will have to adopt the vision of a system that gets needed and appropriate support to the veteran in real time, meaning days and not months or years. They need to lead a claims processing system that welcomes the veteran at the door (preferably reaches out to them earlier) and treats the veteran as one who has earned that welcome. They need to lead a system where the intent is to have the veteran file a claim and get approval (if appropriate) on the same day. They need to lead the current staff on how to better use their skills to help the veteran. They need to demonstrate leadership and work in partnership with the VSOs on how to make the systems better and on how the VSOs can continue to assist the veteran during claims processing and afterward.

But leadership will not succeed without effective management to make and continue to make all this happen. Not just VA but most of the Federal Government does not have the management strength. It clearly doesn't have enough to deal with the level of change we are suggesting here. For VA, there is good management talent in the veterans benefits area. VA will need to develop that talent as well as bolster that talent with strong managers from outside the veterans' benefits system as well.

Duty to Assist; Expectation to Be on Time and on Target

As I conclude, I am sure that some will argue it is unaffordable or undoable. Let me suggest not. First, it could well be built into the $100–$150 billion economic stimulus package moving at this very moment. Second, let me remind you that when we send our service members to war we seem to handle the budget. We can and should do no less when they come home and need our help. That is part of the real cost of preventing or conducting war.

Today, there is a failure to understand and appreciate the veteran's plight. Today's claims processing behavior is more like a castle under siege rather than a home providing compassion, warmth, help, and sustenance. Contrast that with the veterans' health system where care is provided in real time with most administrative details sorted out later. Feel what it is like for a veteran to live in uncertainty and without support for six months or a year or more. What if we did that for health care? It would be unacceptable. Protests would ring in and outside of every care facility. Why do we tolerate it for benefits determination?

For a better future, the bottom line is this. Change the assumptions. Change the process. Use the best technology. Care for the veteran. Meet our obligation—the duty to assist. Deliver on time and on target. "The duty to assist" is an obligation that VA, with regard to benefits, has yet to honorably discharge. "On time and on target" is what we expected of our veterans and what we should expect of VA.

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[1] Economic Stimulus and Duty to Assist Our Veterans

What economic stimulus?

Effective upon enactment, the Department of Veterans Affairs shall:

- Proactively assists a veteran with his/her claim,
- Presume that a veteran filing a claim with basic evidence supporting that claim is entitled to the associated benefit a) for the period of one year or b) until VA completes the processing of that claim [no more than one year], whichever is shorter, and
- Begin payments to a veteran within 30 days of that veteran filing a claim with the supporting evidence.

Within six months after enactment, the Department of Veterans Affairs shall institute a new claims processing system that:

- Proactively assist a veteran with his/her claim,
- Produces a temporary or permanent decision (preferred) within two weeks of a veteran filing a claim with basic evidence supporting that claim, and
- Begins payments to a veteran within 30 days of that veteran filing a claim with the supporting evidence.

Why this economic stimulus?

- Stimulus is temporary (budget impact), timely and on target.
- Dollars paid to veterans will go directly and quickly into the economy to cover basic living expense.
- Housing foreclosures will be reduced as veterans are able to stay current on their mortgages.
- The misery of our veterans with disabilities and awaiting a benefits decision will be substantially reduced as the backlog is essentially eliminated.

- The Department of Veterans Affairs will be incentivized to move as soon as possible to a "real time" claims processing system.
- An important symbolic and real step would be taken to address the needs of veterans with current and future disabilities returning from Iraq and other wars.
- An important symbolic and real step would be taken to keep the promise to care for our servicemembers when their service results in disabling conditions. This also has a positive impact on recruitment and retention.
- The Nation would finally be really moving toward meeting the obligation of "Duty to Assist".
- Bipartisan support is highly likely.

Prepared Statement of Kim A. Graves, Director, Office of Business Process Integration, Veterans Benefits Administration, U.S. Department of Veterans Affairs

Mr. Chairman and Members of the Subcommittee, it is a privilege to be here today to talk about the use of information technology to enhance claims processing within the Veterans Benefits Administration (VBA).

VBA has made significant strides in the use of information technology to improve claims processing in all of our benefit programs. Our current focus is the development of a comprehensive strategy to integrate the various initiatives already underway, leveraging successes already accomplished. VBA is collaborating with the Office of Information and Technology (OI&T) in developing this strategy to ensure our mission needs are met and that the appropriate enterprise architecture is employed.

At the core of our strategy is the implementation of a business model for Compensation and Pension processing that is less reliant on paper documents. The use of imaging technology and computable data to support claims processing in our Insurance, Education and Loan Guaranty programs has been successful for many years. Initial pilot efforts in our Compensation and Pension business line have demonstrated the feasibility of using this type of technology for these benefit programs as well.

Our comprehensive strategy, the Paperless Delivery of Veterans Benefits initiative, is envisioned to employ a variety of enhanced technologies to support end-to-end claims processing. In addition to imaging and computable data, we will also incorporate enhanced electronic workflow capabilities, enterprise content and correspondence management services, and integration with our modernized payment system, VETSNET. In addition, we are also exploring the utility of business rules engine software for both workflow management and to potentially support improved decisionmaking by claims processing personnel. A recent Request for Information yielded a variety of products that may be useful in our end-state vision.

As part of our strategy for improving the claims processing business model, VBA recently contracted with IBM to conduct a study of the current process and suggest improvements. We expect their report shortly and will assess their findings as we move forward with documenting our strategy.

As noted previously, two pilot programs are currently underway and have demonstrated the utility of imaging technology in our Compensation and Pension business line. Both projects utilize our Virtual VA imaging platform and related applications. Virtual VA is a document and electronic claims folder repository.

The first pilot supports our income-based pension program. It involves imaging documents received in conjunction with the annual income verification and reporting process. This imaging allows the three Pension Maintenance Centers (PMCs) to make the necessary claims adjustments without need for retrieval and review of the paper claims file.

The second pilot supports the compensation program at the centralized rating activity sites for our Benefits Delivery at Discharge (BDD) program. The separating servicemember's medical records and supporting claim information are imaged at the outset of the claims process. This allows rating veterans service representatives to make decisions based solely upon review of the imaged records without recourse to a paper claims file. Further refinements of the business process are now underway to identify gaps in the existing system capabilities which will enhance our understanding as we evaluate options for expanding use of this technology.

An additional pilot project is also under development. This project will examine issues such as user authentication and using online forms to provide the capability for the initial "electronic" filing of benefit claims. This is the first step in imple-

menting online "self-service" to allow veterans to manage some of their interactions with VA electronically.

Integration with VETSNET is also a critical success factor in our overall strategy. We have made significant progress in the implementation of VETSNET over the past two years. Approximately 98 percent of all original compensation claims are being processed end-to-end in VETSNET, and we are now paying monthly compensation benefits to more than 850,000 veterans—or approximately one out of every three compensation recipients—using this modernized platform. With our next conversion of records from the legacy Benefits Delivery Network (BDN), scheduled for April, VETSNET will be the primary payment system for Compensation and Pension benefits.

Integration and data exchange with the Department of Defense are also essential, as is our continued expansion of exchange of health care information with the Veterans Health Administration.

In 2001, the Compensation and Pension Records Interchange (CAPRI) application was developed jointly by VHA and VBA. CAPRI provides VBA claims processing personnel access to information from the Veterans Health Information Systems and Technology Architecture (VistA) and that is used in the development and documentation of disability benefit claims. CAPRI also provides access to some Department of Defense medical records through integration with the Federal Health Information Exchange (FHIE) framework. As part of our vision for the future, we will eventually move this data directly into our paperless benefits delivery platform as part of the veteran's "e-file."

As we continue to move forward with the efforts described here, we are focused on developing an integrated project plan, ensuring the needs of our veterans and their families are documented and attainable. Demonstrable milestones and performance metrics will be incorporated so that we and our stakeholders are able to assess our progress in achieving our vision.

To assist in developing this plan, we are working closely with our OI&T partners to develop a Request for Proposals to engage the services of a Lead Systems Integration contractor. The integrator will provide support in documenting both the business and technical requirements for implementation of our strategy.

I assure you the Under Secretary for Benefits is committed to implementation of the Paperless Delivery of Veterans Benefits initiative. Together with our partners in the Office of Information and Technology, we believe this goal is not only attainable, but is imperative to ensure the best possible service to our Nation's veterans. Thank you for the opportunity to address these important issues.

Mr. Chairman, this concludes my prepared testimony. I would be happy to answer any questions you may have.

Prepared Statement of Stephen W. Warren, Principal Deputy Assistant Secretary for Information and Technology, Office of Information and Technology, U.S. Department of Veterans Affairs

Mr. Chairman and Members of the Subcommittee, I would like to thank you for the opportunity to testify today, on the use of information technology to enhance claims processing, within the Department of Veterans Affairs (VA), as well as utilizing data from the Veterans Health Information Systems and Technology Architecture (VistA), to assist in the processing of disability claims. These are very important issues that affect the life of every veteran and their just compensation for disabling injuries, received while serving our Country.

I would like to begin by addressing VA's efforts at leveraging information technology to improve the timely delivery of veterans' benefits. The Office of Information and Technology (OI&T) has been collaborating with the Veterans Benefits Administration (VBA), in the development of a comprehensive strategy to enable the achievement of their target business model. The operational concept of the Paperless Delivery of Veterans' Benefits initiative is to employ enhanced technology platforms to include imaging, computable data, electronic workflow capabilities, and enterprise content and correspondence management services. The initiative will integrate with VBA's core business application and modernized payment system, the Veterans Service Network (VETSNET).

OI&T also supports VBA's market research of business rules engine software, and other decision support technologies, which can be leveraged to support improved and expedited decision making, by claims processing personnel. OI&T recently released a Request for Information (RFI) from industry. The RFI resulted in the demonstration of technologies that may help support VBA's business strategy. The RFI process

helps VA gain a better understanding of how private industry and other government agencies employ these technologies to support their business models. OI&T has also conducted analyses of technical architectures, business applications, and Commercial-Off-The-Shelf (COTS) products, utilized to support the business processes of the Social Security Administration (SSA), as well as the Veterans Affairs organizations of Australia and Canada.

A Statement of Work (SOW) is currently being prepared to engage the services of a Lead Systems Integration Contractor (LSIC). The purpose of this contract is to assist VBA with the development of an overarching strategy and business requirements for the Paperless Delivery of Veterans' Benefits initiative. These key deliverables will enable OI&T to begin specifying the supporting technical architecture and business application.

Mr. Chairman, I would now like to highlight how the utilization of data from the Veterans Health Information Systems and Technology Architecture (VistA) assists in the processing of disability claims. The business application used by VBA, to navigate and retrieve clinical data within VistA, is called the Compensation and Pension Record Interchange (CAPRI). Online access to medical data, housed in VHA's VistA, supports the disability benefits determination.

CAPRI also provides access to some DoD medical records, through integration with the Federal Health Information Exchange (FHIE) framework. CAPRI was nationally deployed during Fiscal Year 2001, and delivers cutting edge "point and click" technology to the users' desktop. Since its deployment, the application has been repeatedly enhanced, as new categories of clinical data in VHA and DoD became available.

Mr. Chairman, In closing I want to assure you that we remain steadfast in our efforts, to continuously optimize any and all information technology improvements, as we strive to improve our veterans' benefits IT environment. Our goal is that these efforts, coupled with the support of VBA and our partners in the private sector, will greatly improve the business processes, which will significantly enhance the disability claims process for our Nation's heroes. Thank you for your time and the opportunity to address these issues. I would be happy to answer any questions you may have.

Statement of Raymond C. Kelley, National Legislative Director, American Veterans (AMVETS)

Mr. Chairman and Members of the Subcommittee:

Thank you for providing AMVETS (American Veterans) the opportunity to submit our views regarding the use of artificial intelligence in VA claims processing.

The claims backlog that plagues the Veterans Benefits Administration (VBA) has been a great concern for veterans, and AMVETS is pleased to see the Committee on Veterans' Affairs is taking the time to genuinely study this issue so long-lasting, effective changes can take place. AMVETS believes the use of artificial intelligence (AI) could greatly reduce the time involved in processing disability claims. The use of AI to reduce the amount of data provided to reflect only the information that is necessary to make timely and accurate decisions is not a new idea. The government has been using AI to select applicants for Federal positions and AI is being used in occupational health services to determine compensation for private and government facilities. So the question is not can AI be used to assist VA in the claims process, it is, to what extent can and should it be used?

AMVETS generally supports the idea of using AI to improve the VA's claims processing system with some reservations. Integrating AI into the VBA to assist in the disability claims system could greatly improve the efficiency of the claims process or it could exacerbate the problems in the current method of adjudicating a claim. The use of AI would bring about a 100% electronic method of recordkeeping, which would provide easy access to records at all phases of the claims process. This would prevent the loss or misplacement of information.

AI has the potential to significantly increase speed and accuracy during the triage and pre-determination stages of the claims process. At these points of the process, over and under development of claims happens all too often. With AI reviewing all of the incoming medical records, compensation and pension (C&P) exams that need to be ordered would be identified. This could prevent redundancy in examinations and ensure all necessary exams are requested and conducted, preventing the Rating Veteran Service Representative (RVSR) from beginning their work only to realize that additional C&P exams will be required. The rater now has the choice of either doing a partial rating, or stopping the rating, requesting the appropriate C&P

exams, and completing the rating decision when the C&P exams return. Normally, this is a 60 day process.

Disparity in the rating system from one regional office to another has become a major issue in disability claims compensation. The use of IA could, if developed properly, provide the rater with the appropriate diagnostic code for the determination of the percentage of disability for which a claimant qualifies. This is because AI also has the ability to recall all diseases and medical conditions and almost instantaneously compare all of the veterans' conditions against its database. Because of this, rare diseases and conditions that rating specialists see infrequently, such as keratoconus, will not be overlooked. Conversely, AMVETS has a concern that too much reliance on AI could result in not allowing logic to be used in determining the qualification of disability, something only a human can provide. So a line would need to be draw on how much responsibility will be given to the AI.

However, the level of complexity of the AI would require brings about concerns on its own accuracy. The AI software would either have to be able to read handwritten documentation or physicians would have to type all of their findings. Also, there are certain tests that are represented in diagram or table form, such as the loss of field of vision test and the results of audiologist exams. The AI would need to understand and interpret these types of exams or be able to recognize their presence and prompt the rating officer to review them. This issue begs the question, will AI be grandfathered or will it have a starting point? If there is a grandfather provision, the AI will need to recognize medical terminology that has a tendency to change over time.

To utilize artificial intelligence properly, the terminology inputted into the system would have to match the terminology the system recognizes. This brings to light the inconsistencies between the checklists contained in the Disability Evaluations Examination Worksheets used by VA physicians to conduct compensation and pension (C&P) physical examinations and the criteria contained in 38 C.F.R., Part 4, SCHEDULE FOR RATING DISABILITIES. In many cases, the descriptive words do not match. AMVETS' concerns are that AI software is not smart enough to provide accurate results when a physician's report does not exactly match the description of the rating even though the intent of the report describes the disability and the rating veteran service officer (RVSR) could interpret the meaning of the report though logic.

There is a fundamental disconnect between the check list that prompts physicians on the Disability Evaluation Examination Worksheet that is used during the Compensation and Pension Exam, and the description in 38 CFR Part 4 that is used by the RVSR to determine the percentage, if any, that will be granted to a claimant. For AI to be an asset to the claimant, the physician's write-up must match the language used in 38 CFR Part 4. Under the current system of evaluation, a rating officer can determine the intent of a physician's evaluation.

To receive a 30% disability rating for PTSD, 38 CFR Part 4 states:

> Occupational and social impairment with occasional decrease in work efficiency and intermittent periods of inability to perform occupational tasks (although generally functioning satisfactorily, with routine behavior, self-care, and conversation normal), due to such symptoms as: depressed mood, anxiety, suspiciousness, panic attacks (weekly or less often), chronic sleep impairment, mild memory loss (such as forgetting names, directions, recent events).

A claimant may have these conditions and they may be documented in the physician's evaluation. However, if the physician states the patient has some memory loss, rather than listing it as "mild" memory loss, then AI may not discern between the words or phrasing used by the physician and what it is looking for as it relates to 38 CFR Part 4. These logical word choices could easily result in the claimant receiving a lower or no rating for a disability. For artificial intelligence to be applicable it would be necessary to develop a Disability Evaluation Examination Worksheet that is based on the language used in 38 CFR Part 4 so semantics or synonyms would not reduce or prevent a claimant from receiving disability compensation. This would be easiest to facilitate on ratings of lost limbs or joint problems and become more complex when dealing with issues that have multiple variables such as PTSD or TBI.

Again, AI could greatly benefit VA and the claimants if the system was allowed to work in all phases of the claims process and the information received by the system was completely and properly reviewed. Also, it is important to maintain the ability to intervene with human logic when necessary.

Mr. Chairman, this concludes my testimony.

Statement of Steve Smithson, Deputy Director,
Veterans Affairs and Rehabilitation Commission, American Legion

Mr. Chairman and Members of the Committee:

Thank you for giving The American Legion the opportunity to present its views on the topic of using artificial intelligence to improve the Department of Veterans Affairs (VA) claims processing system. As VA's claims backlog continue to grow, it is important to explore new ways to utilize advances in technology that VA can implement to adjudicate benefits claims in a more timely and accurate manner. We commend the Subcommittee for holding this hearing.

The American Legion welcomes innovative ideas, such as electronic claims processing and other uses of technology, which will enable VA to improve the service it provides to this Nation's veterans, especially in the arena of benefits delivery. We must, however, caution that automation does not guarantee quality claim development and speed does not guarantee accuracy or quality of data entry. Moreover, although the use of such technology might improve the process, it is not a magic bullet that will fix all the problems that are currently plaguing VA's disability claims process. Areas such as inadequate staffing levels, training, quality assurance, accountability, premature adjudication of claims and other problems resulting from VA's current work measurement system, as previously addressed by The American Legion in testimony before the Subcommittee, must be adequately dealt with before any real improvement resulting from use of artificial intelligence can be realized. Therefore, artificial intelligence based programs that direct the development and the adjudication of claims should be published in the Federal Register so that the public, especially stakeholders such as The American Legion, can provide written comments.

The American Legion believes that the human element should never be removed from this equation and we are pleased that various experts that testified before the Subcommittee on the use of artificial intelligence in claims processing also agreed with this philosophy. Additionally, it must also be kept in mind that the bulk of the time and effort expended by VA in the disability claims process is not in the actual adjudication or decisionmaking part of the process; rather it is the part of the process that involves the development of the claim prior to adjudication. This process involves informing the claimant of the evidence that is needed to substantiate the claims as well as assisting the claimant in obtaining the needed evidence, such as military personnel and medical records, relevant medical evidence (both private and VA), scheduling compensation and pension examinations and other efforts necessary before the claim is ready to be adjudicated. Evidence development can be very time consuming and it is extremely important that any electronic claims system utilized by VA in the future adequately address this important part of the process, not just the actual adjudication of the claim, or any actual improvement in the current process will be minimal at best.

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to present The American Legion's view on this issue. This concludes my testimony.

Statement of Kerry Baker, Associate National Legislative Director,
Disabled American Veterans

Mr. Chairman and Members of the Subcommittee:

I am pleased to submit for the record, the views of the Disabled American Veterans (DAV) on the issue under consideration today. In accordance with our congressional charter, the DAV's mission is to "advance the interests, and work for the betterment, of all wounded, injured, and disabled American veterans." We are therefore pleased to support various measures insofar as they fall within that scope.

Regarding the implementation of an electronic claims' processing system, the DAV is not opposed to VA utilizing a test facility to begin implementation of such software on an experimental and limited basis. We will limit our support for this type of project in this manner until such time as adequate research and testing has been completed that provides evidence that a massive rollout of such technology is feasible. Additionally, while we support this novel idea, we caution Congress not to act in haste whereby legislation becomes law that imposes on the VA a requirement to implement such technology within a specific timeframe, especially when the potential technology has not been sufficiently identified. Imposing too short of a time limit for VA to implement such a virtual structure will only thwart its long-term success.

A more reasonable approach would be to enact legislation that requires VA to submit to Congress a broad and over-arching plan by a reasonable date outlining the

technology identified and the manner in which such technology will be utilized. Once this plan is complete, the groundwork will be laid for VA to coordinate with various entities, i.e., Congress, Veterans Service Organizations, Department of Defense, etc., in order to begin turning the plan into reality on a larger scale. The DAV would welcome the opportunity to work with the Agency, to include any contractors, in order to assist in the development of an electronic claims process system.

The DAV also feels that using the term "artificial intelligence" is inappropriate as it is defined as "the capability of a machine to imitate intelligent human behavior."[1] The goal of any form of electronic claims process should be to automate, and thereby shorten as much as possible those portions of the claims process that currently consume the majority of time. Expecting a form of technology to imitate intelligent human behavior with respect to the decisionmaking process of VA's benefits delivery system, particularly where evidence weighing and judgment calls on such evidence are required, appears as an untenable goal—automation rather than human imitation is the first logical phase of this undertaking.

Contrary to some beliefs, the majority of time spent by VA on disability claims is in preparing the case for a decision. This includes receiving the claims by VA, establishing the claim in VA's current computer systems, and developing the evidence to support the claim. Evidence development, whether in the form of gathering military service records from the service department, military records from the Records Processing Center, private health records, VA health records, VA or private medical opinions, and stressor verification through the U.S. Army and Joint Services Records Research Center for claims of service-connection for Post Traumatic Stress Disorder, consumes the vast majority of the claims-processing time. Therefore, any viable electronic claims-processing system implemented with real expectations of shortening the claims process must focus on all VA functions and development leading up to the rating decision more so than just the rating decision itself.

As far as automating functions of the decisionmaking process, caution must be exercised. Obviously, the first reasonable step in automating the final decisionmaking process would be to start with strict fact-based scenarios wherein a set of mandatory fact patterns equates to a mandatory award of benefits. The DAV believes that any attempt to go beyond this level of automation in the beginning phases of implementation, would likely cause more problems than it would solve. For example, rating decisions are required to contain adequate reasons and bases that explain to the claimant the purpose behind a particular decision.[2] This becomes especially important when VA denies benefits. Without a detailed explanation of why a claimant is not entitled to a benefit sought, veterans and their dependents will have no recourse to correct what may only be minor deficiencies in their claims. Judgment necessary to communicate this type of explanation on a case-by-case basis will be inherently problematic for an automated process.

Additionally, any authorizing legislation concerning the issues herein must be accompanied by sufficient appropriations required to carry out such authorizations. To do otherwise would be tantamount to legislation incorporating its own veto.

Ultimately, the DAV believes that proper utilization of technology has the potential for positive change by yielding the type of assistance that could bring the VA claims process into the 21st Century. Nonetheless, to be highly successful, Congress must avoid any proclivity to view this as a purely VA problem. The VA merely sits at the bottom of a whirlpool fueled by outside information. Automating the processes within the VA without automating the processes by which the VA acquires and assembles its information—information on which its end product is dependent—will do little to expedite VA's claims process.

We appreciate the Committee's interest in these issues, and we appreciate the opportunity to present the DAV's views, which we hope will be helpful.

Statement of Paralyzed Veterans of America

Chairman Hall, Ranking Member Lamborn, members of the Subcommittee, Paralyzed Veterans of America (PVA) would like to thank you for the opportunity to present our views on this important issue. PVA appreciates the efforts of this Subcommittee to address the rapidly growing claims backlog.

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[1] Merriam-Webster's Collegiate Dictionary, 10th Ed., Pg 66., Merriam-Webster, Inc. Springfield, Massachusetts

[2] 38 C.F.R. §3.103(b)(2006) ("Claimants . . . are entitled to notice of any decision made by VA affecting the payment of benefits. . . . Such notice shall clearly set forth the . . . *the reason(s) for the decision.* . . .") (emphasis added).

The interest to develop or adapt the necessary programs to help with claims processing is greater now, than ever before. In recent hearings Congress has informed the Department of Defense (DoD) and the Department of Veterans Affairs (VA) that they must accelerate their efforts toward achieving the long overdue policy of "seamless transition." In testimony last year the information technology (IT) specialists reported that it will be at least 2012 before the DoD and VA medical records will be interoperable. Moreover, this projection of five years into the future does not take into account unanticipated problems. As both agencies work toward this monumental goal, we believe the VA should also continue the development of electronic processing of claims.

PVA believes that the use of artificial intelligence (AI) in the processing of claims could help reduce the backlog of claims and increase the accuracy of the process. AI has been used in health care-benefits delivery systems of the Federal Government and private industry for years.

One serious problem recognized by the veterans' service organizations and other organizations that have examined the claims process is that many claims are not developed properly. A fully developed claim presented to the VA can generally be quickly decided. Using AI to process claims will not necessarily, overcome the problem of an unprepared claim, nor will it properly process an incomplete claim. We must acknowledge that the backlog problem starts in the beginning with proper development completing a claim. This is tedious and detailed work that must be completed by the veteran filing the claim for himself or herself, or working with a trained veterans' service officer. VA employees reported to the Veterans' Disability Benefits Commission that veterans who were assisted in filing a claim or appeal by either a VA benefits counselor or a veterans' service representative filed a better, well-documented claim.

PVA Service Officers receive 18 months of training using electronic programs, text books, on-the-job observance and final testing. After completing this program the service officer is usually placed under the direction of a senior service officer. And yet, this only provides the basic knowledge necessary to properly prepare a claim. Still, there is little comparison between a PVA prepared claim and a claim prepared totally by the average veteran. We believe the VA must direct more effort toward proper preparation of a claim before it is submitted to the Rating Veterans Service Representative, (RVSR) for review.

Many examples of the large disparity in compensation awards have been discussed in hearings during the 110th Congress. It has been reported that a significant percentage difference exists when comparing the same disability rating from two different VA Regional Offices (VARO) in separate states. The use of AI could standardize the final decision on compensation.

The process of using AI could be integrated into the system in 2–4 years as software is developed. However, it should be carefully tested and audited as the final product of the system is meant to be an accurately decided claim. Until that time, the VA will still need resources and staff. The Independent Budget for FY 2009 estimates the Comp and Pen service will need 12,184 total full time employees to address new claims and the claims backlog.

We also recommend that the VA consider expanding the process of bringing back retired VA claims personnel. This has proven successful in expediting the processing of claims.

PVA would favor testing the electronic processing of claims in certain regions perhaps as a pilot program. We would hope that VSOs, the veterans' community, and the interested parties would be involved in evaluating the finished product. If a program using artificial intelligence proves beneficial in accurately processing some types of claims, we believe this could be a significant step forward for the VA.

PVA would like to thank you for the opportunity to submit this written statement. We appreciate the efforts of the Subcommittee to address the important issue of veterans' claims backlog. We look forward to working with the Subcommittee on this issue during the second half of this Congress. We would be happy to answer any questions that you might have.

POST-HEARING QUESTIONS AND RESPONSES FOR THE RECORD

Committee on Veterans' Affairs
Subcommittee on Disability Assistance and Memorial Affairs
Washington, DC.
February 4, 2008

Tom Mitchell, Ph.D.
School of Computer Science
Machine Learning Department
Carnegie Mellon University
5000 Forbes Ave.
Pittsburgh, PA 15213

Dear Dr. Mitchell:

In reference to our Subcommittee hearing on the Use of Artificial Intelligence to Improve the VA Claims Processing System on January 29, 2008, I would appreciate it if you could answer the enclosed hearing questions by the close of business on March 4, 2008.

In an effort to reduce printing costs, the Committee on Veterans' Affairs, in cooperation with the Joint Committee on Printing, is implementing some formatting changes for materials for all full committee and subcommittee hearings. Therefore, it would be appreciated if you could provide your answers consecutively on letter size paper, single-spaced. In addition, please restate the question in its entirety before the answer.

Due to the delay in receiving mail, please provide your response to Ms. Orfa Torres by fax at (202) 225–2034. If you have any questions, please call (202) 225–3608.

Sincerely,

JOHN J. HALL
Chairman

The Use of Artificial Intelligence to Improve the VA's Claims Processing System
Tom M. Mitchell, Ph.D.
United States House of Representatives
Committee on Veterans' Affairs
Subcommittee on Disability Assistance & Memorial Affairs
Hon. John J. Hall, Chairman

April 2008

Question 1: If VA were using the technology you described, how many days could it take VA to rate a case given that some claims have upward of 10 conditions per claim?

Response: The computer technology I describe executes very quickly on the computer, similar to the speed of TurboTax, which calculates taxes in a few seconds despite the complex Tax Code. Therefore, the number of days it would take the VA to rate a claim would be determined not by the computer technology (whose processing would only require seconds, not days), but instead by the delays it faces in collecting the data on which these decisions are based. In our round table discussion, the VA asserted that it faces large delays in pulling together the information required to rate a claim. Perhaps that delay could also be reduced by technology that maintains online a record of which information is in hand, and which is still to be obtained.

Question 2: How complex is this type of technology and how long would it take to create such a system?

Response: A prototype expert system, similar to TurboTax, could be implemented and ready for test deployment in a matter of months, not years, given a relatively small team of fewer than a dozen experts in this technology. Of course the full time-to-deployment includes more than the time needed to develop the software itself. It also includes the time it would take to make organizational changes to adopt the software, to train people on how to use it, etc. I do not have sufficient information to estimate the speed at which the VA could adopt the software once it was ready, so I will leave that part of the question to others.

The timeline I would recommend for introducing such expert systems to the VA would involve (1) develop a prototype expert system to be used initially by only a small subset of the people who rate claims. This team of raters should work closely with the software team who are developing the expert system, to provide them with feedback about the user interface and functions, and to create a rapid re-design cycle in which the prototype software is developed, tested, refined, retested, refined again, etc. In this way, the VA users can have a strong voice in the design of the software that they will want in the end to use. (2) once a small team of VA raters have gone through this cycle, they can become the advocates to help spread this technology inside the VA, and to help train others on how to use it, and why it will be helpful. I expect the first step can be completed in about a year.

Question 3: If VA could "data mine" as you have suggested, and reduce the mundane tasks staff currently perform, could the computer also send employees alerts to notify veterans of other benefits that they may not have applied for or may not be aware exist?

Response: Yes, and in fact my contacts at Highmark Blue Cross tell me they use data mining of their own medical claims in precisely this fashion, for example to alert patients with chronic medical conditions of services that similar patients take advantage of, but which they are not filing for. The key idea here is this: data mining provides a computer-based approach to discovering regularities across many benefits claims. For example, one regularity might be "if veterans who file for compensation for loss of a leg, typically also file for a wheelchair." Such a regularity can be automatically tested for each new claim, to determine whether it applies to this claim, and if so to alert the filer of the claim. Of course this is a simple rule, but the fact is that there can be hundreds or thousands of such regularities, and the data mining system can both discover these regularities and use them to send email alerts to veterans when relevant.

Question 4: What would the cost be associated with implementing and operating such a system?

Response: I am not certain of the answer to this. My advice would be to consult with one of the software companies that has already developed similar software for medical insurance companies. They would have much more expertise than I to answer this question.

Question 5: You recommend that VA study the use of automation. What aspects of it do you foresee included in such a study? How long should such an analysis take?

Response: I do recommend the VA seriously study the use of automation. It is clear that automation can be helpful, so I doubt that in and of itself is the right question. The appropriate question is instead "which aspects of VA benefits can/should be automated or semi-automated?" Surely some simple steps (e.g., sending reminders to veterans that we are still waiting for information X to finalize the claim) can be automated. Other steps—those requiring substantial human judgment—might not be amenable to full automation. But even these steps in the workflow might be improved in accuracy and efficiency by computer assistance. One example is that when a human rater is considering a difficult case, the computer could retrieve and present the five most similar claims out of the many thousands that had been processed in the past. This is a use of computers to support human decisionmaking, and is what I referred to as case-based reasoning.

More broadly, I believe the VA should consider introducing (1) fully electronic claims records coupled to the electronic medical reports for the veteran, (2) expert systems technology for automated and semi-automated processing of claims, (3) case-based reasoning systems to assist human claims processors by presenting the most similar historical claims, and (4) data mining systems that can discover regularities in historical claims and can spot new claims determinations that appear anomalous with respect to this historical precedent.

In our round table discussion, I was surprised to find how little the VA has apparently studied this issue in the past, and even more surprised to see how little has come out of such "studies." In my opinion, the kind of "study" the VA should do is not merely a study that produces a written document. Instead, it should do a study centered around active experiments that introduce computer technology in specific, limited, experimental ways, and the study should report on the experiments and the results. Such a study need not take years to complete—it should take months instead. Why not run a study that introduces each of the four technologies I suggest above, each in a limited way with a limited number of claims processors participating. If this were done, then a year from now we'd understand what really works,

what really doesn't, and where the surprises lie. Studies that just involve thinking without experimenting are less likely to produce truly useful insights.

Committee on Veterans' Affairs
Subcommittee on Disability Assistance and Memorial Affairs
Washington, DC.
February 4, 2008

Randolph Miller, Ph.D.
Professor, Former Chair
Department of Biomedical Informatics
EBL 416
Vanderbilt University School of Medicine
2209 Garland Ave.
Nashville, TN 37232–8340

Dear Dr. Miller:

In reference to our Subcommittee hearing on the Use of Artificial Intelligence to Improve the VA Claims Processing System on January 29, 2008, I would appreciate it if you could answer the enclosed hearing questions by the close of business on March 4, 2008.

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Sincerely,

JOHN J. HALL
Chairman

Response to Questions from the Honorable John J. Hall
Chairman, Subcommittee on Disability Assistance and Memorial Affairs
U.S. House of Representatives
Hearing on the Use of Artificial Intelligence to Improve VA Claims Processing System
From: Randolph A. Miller, MD of Vanderbilt University Medical Center
Composed February 28, 2008 for March 6, 2008 Meeting

Question 1: The VA does three things when it adjudicates a claim: 1) it establishes there is a diagnosis; 2) it connects the diagnosis to the Veteran's time in the service; and, 3) it rates a level of severity of the disability. Do you think that the VA could use rule-based expert systems or some other application to complete these functions in assessing disability?

Response: The short answer to the question is yes, the VA could use expert systems technology to improve the speed and quality of VBA disability claims processing. Nevertheless, the current, predominantly paper-based methods of claims processing must become more automated before it is even possible to consider use of expert systems. Such expert systems require accurate and detailed electronic records as input data in order to be effective.

The testimony on January 29 before the House Subcommittee on Disability Assistance and Memorial Affairs clearly documented that paper forms the basis for current VBA claims processing. The hearing illustrated how paper-based records are easily misplaced or lost, and how they become fragmented as different groups within VBA require concurrent access to different parts of a Veteran's records while processing a claim.

So the key question is how can the VA get from what is the current state of claims processing to a better, automated future state. In my written statement submitted for January 29, I outlined what I believe are three important phases of effort for doing so. Phase I would consist of building an electronic infrastructure to automate the steps of the existing disability determination system, in order to gain effi-

ciency. While automation can eventually lead to a more complete redesign and overhaul of the claims processing system, it would be too disruptive—to both VA employees and to Veterans waiting for disability determinations—to scrap the current system and start over from square one all at once. Once the Phase I infrastructure was in place and being used gainfully, Phase II would enhance the automated infrastructure by adding decision support capabilities, some of which would involve expert systems technology. Clinical decision support programs provide assistance to healthcare workers in solving problems. Decision support includes expert systems as one of its many categories. The goal of decision support programs is to enhance the capabilities and efficiency of qualified and capable humans, not to replace the humans. Finally, Phase III would create quality monitoring and feedback processes to help the VA enhance, evolve, and improve disability determination processes over future years.

The steps for each of the three phases are as follows:

PHASE ONE—BUILD INFRASTRUCTURE TO AUTOMATE STEPS OF EXISTING DISABILITY DETERMINATION SYSTEM, TO GAIN EFFICIENCY

Phase I, Step 1: At time of discharge from active duty, all Veterans should have a disability examination by a qualified healthcare practitioner that sets an initial, temporary level of disability. When any disability exists, appropriate payments should begin immediately upon discharge from the service as a prerequisite for discharge from active service.

The record of the "active service discharge disability determination" should be stored electronically. When this disability determination occurs, there should be a target time, based on the level of disability and the Veteran's needs, to complete a more "permanent" disability rating (which would be equivalent in its objectives to current disability determination by VBA, but different process-wise, as detailed below). This goal "time to 'permanent' status determination" should be set at active duty discharge to be one of 3 months, 6 months, or 1 year. Of course, disability status is not really "permanent" in that the disability condition can evolve over time, and the Veteran should always retain the right to appeal to assign a different status than was set. The Veteran would receive disability benefits at the temporary level until the "permanent" level evaluation is completed, and then receive benefits at the "permanent" level, with no interruptions in between.

Phase I, Step 2: Identify the entire range of the types of records (documents and forms) that VBA must track to process an individual's claim. Give each record type a unique name, and create a definition and template for its contents. Similarly, identify the steps of disability determination that VBA goes through (i.e., each type of decision made by VBA) as it processes a claim from initial application to completion. Give a unique name to each step in processing.

This is self-explanatory. The process should be completed within 2–4 months, given adequate staffing and resources.

See for example, prior work done within the VA in this regard: Brown SH, Lincoln M, Hardenbrook S, Petukhova ON, Rosenbloom ST, Carpenter P, Elkin P. Derivation and Evaluation of a Document-naming Nomenclature. J Am Med Inform Assoc. 2001;8(4):379–390.

Phase I, Step 3: Develop and implement a plan to convert all relevant VBA records to electronic form.

In changing to a more electronic disability determination system, one must be careful to convert almost all routine activities of VBA raters to being electronically based, with actions analogous to what they now do with paper. If both paper and electronic systems were in active use, a VBA rater would always have to check both systems to see if "missing" items in one system are actually not "missing", but present in the second system. It would potentially be worse—more cumbersome and slower for disability determinations—if VBA raters had to use both types of record systems together in processing a Veteran's application, than to use only one or the other system.

The most straightforward way to begin conversion to electronic processing is to identify where paper records are currently generated, and where existing VHA/VBA software is applicable to creation of electronic versions of that paper-based information. For all other paper records that cannot be easily converted in this manner, the document naming system should be used to label them, and then records in each category should be electronically scanned to create electronically retrievable records with their dates of creation and their "named" labels. Ultimately, subsequent

projects should develop tools to capture the content of all disability-related records at their source, through electronically-structured and standards-coded forms that create "computer-processable" content—using future electronic capture tools analogous to the existing VHA CAPRI system. The conversion should proceed based on each local/regional VBA office being converted as rapidly as possible before going on to the next office—trying to do a VBA system-wide conversion on a single day could create too much chaos, due to the intensive level of support required in each local/regional office during such conversions. Once a large enough conversion support team existed, with adequate conversion experience, the pace of conversion could accelerate. All offices across the U.S.A. should be converted within a six to nine month span, using this model of starting slow and building momentum.

Phase I, Step 4: Create a VBA automated record-tracking system that uses as a checklist the named set of steps created in Step 1 above, and uses the names of each record/document type to determine the status of each document for any given applicant.

The checklists should be based on both an understanding of the definitions of each disability provided in CFA 38 Part 4 (and its amendments), and also an audit of adequately completed disability determination records for each type of disability possible in CFR 38 Part 4. Thus, for each condition, there should be a list of the types of records and documents that are potentially relevant to disability determinations of that type, but also a list of the "standard named" processing steps that are required to carry the determination to completion. The record tracking system will show which steps and which documents are relevant in general, and which steps and which actions of that set the VBA has deemed required in a given Veteran's case, and then which of those required documents and steps are completed/available through the electronic system, and which steps and procedures remain to be completed. The VA's AMIE and CAPRI systems have to some extent done this for components of the disability examination by the clinician, so the approach taken in developing those systems might inform the development of this more general tracking system.

As noted above, once documents that comprise the full VBA record each have names, the existing documents initially can be scanned and stored and made reviewable by their formal names. Decisions that have been made would be displayed using their formal names. Scanning is a low-level form of technology that could free VBA workers from having only one paper document to review. However, scanning essentially creates a picture of the original document that humans can read and process. The latter scanned documents are, for the most part, not readable or understandable by machines.

There are already portions of the VBA record that go beyond the simple technology of scanning, such as the CAPRI disability examination system used within VHA (and available for viewing at VBA). Note that scanning is a lowest-common-denominator first step that can move everything forward. The ultimate goal should be to make all disability related materials based on fully electronic data capture forms, like CAPRI.

Once a document is scanned (or captured electronically using a template form), it should be stored centrally, with good backup and recovery capabilities, not at local offices on desktop computers—modeled after the way that the VA's VistA electronic medical record system now works. The Internet can be used to view the centrally stored record from diverse VBA and VHA locations concurrently—substantially speeding up the ability to process a record. Similarly, the electronic checklist of steps required to complete a disability determination should be treated as if it were part of each Veteran's electronic medical record. The current status of each disability determination step, as well as target dates for completion of each required step, should be readily viewable from a central storage location. A reminder system can be built to warn VBA employees when the "next step" for each Veteran becomes due, and repeated reminders can be issued for steps that are overdue. At the completion of this step, there would be a tracking system in place that can immediately indicate where in the overall process each Veteran's application stands, and what documents are available to support both past and future decisions.

Phase I, Step 5: Transition from a scan-based set of forms that were originally on paper to a computer-template based set of forms that collect primary data electronically (once, and from the most knowledgeable source) to enable better computer-based assistance in disability determinations.

To develop electronic-templated data collection criteria for each disability condition would require human review of the latest version of CFR 38 and amendments for each condition, and creating: (a) a list of findings, coded in standard term-

inologies, such as SNOMED–CT or LOINC, required to be present to establish the disability, (b) a list of findings, coded in SNOMED–CT or LOINC required to be absent to establish the disability, (c) a list of findings that help to support the presence of the condition but which are not required to establish the condition, coded in SNOMED–CT or LOINC, (d) a list of the document types (using the standardized document names per above) that are relevant to determination of the specific disability condition, (e) the list of CAPRI frame identifiers that are relevant to determination of this specific disability, (f) names for each of the 700 conditions coded wherever possible in ICD, DSM, or SNOMED–CT, and (g) narrative text that describes the remaining criteria for the establishment of the specific disability condition that could not be coded in steps (a) through (c). This process could expand upon, and derive useful information from, the list of the required procedures/steps/documents/records for each disability category that was built in Phase I, Step 4 above.

Phase I, Step 6: Create an automated "dashboard" for each VBA site (and which can be "rolled up/summarized" at the regional or national levels) that tracks all Veterans who have applied for disability compensation, the state of their applications, the status of their disability determinations, and uses color codes to indicate when steps are incomplete or overdue.

This step is somewhat self-explanatory, and should be the end-product of the previous steps in Phase I (especially steps 4 and 5). It should directly lead into Phase II Step 1.

Phase I, Step 7: Determine how to best facilitate Veterans' application processes for disability determinations, using electronic entry forms and other automated methods to make the process more efficient and effective for Veterans and their families.

PHASE TWO—ENHANCE AUTOMATED INFRASTRUCTURE FOR DISABILITY DETERMINATION WITH DECISION SUPPORT FEATURES

Phase II, Step 1: Design, build, and implement, on top of the new VBA electronic tracking system, a rating system that enables claims to be electronically prioritized so that the most obvious or easiest to decide claims can be adjudicated more quickly.

Once the automated tracking system is in place and running smoothly in pilot sites, a team of system designers, which should include computer-interface design experts, and socio-technical implementation experts, should obtain input both from expert disability raters (i.e., experienced, highly respected VBA employees) and from the most experienced and capable users of the new electronic tracking system. The collective wisdom of the group should focus on the question of how to determine, at any given time, which disability claim records are the most important to process rapidly (i.e., where a Veteran clearly and urgently needs assistance but is not getting assistance), and which records are easiest to process rapidly (i.e., require minimal effort to resolve).

The result of these deliberations should be used to design and test a system that can create prioritizations that match those of human experts on preliminary system testing, with the goal of pointing out to VBA reviewers at each site what their priorities should be. Ongoing validation of such a system will be required, with frequent feedback from VBA end-users.

The system should be merged with the tracking system of Phase I Step 6, to indicate which cases merit immediate attention of what sort, and with what priority. The system should set deadlines for relevant actions to occur, and remind VBA caseworkers of work requiring attention. An escalation process should inform managers at the local, then regional and national levels of the number and nature of cases requiring attention that have not received it in a timely manner, and could help to make sure adequate resources are devoted to resolving disability determinations promptly.

The system should also be expanded to track the percent disability and the disability award amount for each disability category from CFR 38 Part 4.

The tracking system should also be made available to each Veteran who applies for disability determination to provide a summary level of where the application stands in its progress to completion, providing the Veteran with what steps have been completed, which steps remain, what documents have been received, and which are still outstanding. Care must be taken to make sure that the tracking system does not provide confusing or disturbing information to the applicant Veteran.

Phase II, Step 2: Use expert diagnostic system techniques to assist human judgment in diagnosis of disabilities within VA rating system. As a part of this effort, completely redefine electronically the criteria for disability de-

termination (in CFR 38 Part 4), and in doing so, create electronically actionable objective criterion lists as well as lists of which subjective judgments are required by human disability experts to complement the objective criteria in making decisions.

A number of techniques developed over the past three decades for clinical decision support [see references at end of this step below] are relevant to future enhancements to a VHA/VBA disability determination and documentation system. At the national level, the VHA has been a major contributor to clinical decision support through its evolution of the VistA electronic medical record system. In addition, many talented individuals working within the VHA and VBA have also made contributions. It should be noted that Dr. Robert Kolodner, currently Director of ONC (the Office of the National Coordinator for Health Information Technology within the Executive Branch of the Federal Government) previously served with great distinction as a leader of informatics efforts within the VA.

An important technological approach relevant to VBA claims processing is clinical diagnostic decision support applications [see references below for this step], which can be probabilistic (Bayesian), criterion-based, or heuristic ("artificial intelligence" expert systems) in nature. In general, such systems take as input standardized vocabulary descriptors that characterize a patient's condition (such as history, physical examination, or laboratory findings) and produce as output a ranked list of possible diagnoses and a suggested approach to determining which diagnoses are present—with respect to a specified target set of allowed or possible diagnoses (which would be those specified by CFR 38 Part 4 and its amendments for the case of the VBA).

It is important to note that diagnostic expert systems are useless in the absence of objective criteria to be used in making diagnoses. Such systems also require that all input data be in electronic form. The diagnostic criteria can include subjective ratings by human experts as part of the "objective" rating process, so long as the instructions for the human raters are clear, and the raters are calibrated to be equally reliable as other raters in carrying out such subjective assessments.

Relevant to these considerations are two recommendations from the Institute of Medicine's (IOM's) June 2007 report, "A 21st century System for Evaluating Veterans for Disability Benefits" (National Academies of Science Press, 2007; Copyright © National Academy of Sciences. http://www.nap.edu/catalog/11885.html), listed below:

> *"IOM Recommendation 4–1. VA should immediately update the current Rating Schedule, beginning with those body systems that have gone the longest without a comprehensive update, and devise a system for keeping it up to date. VA should reestablish a disability advisory Committee to advise on changes in the Rating Schedule."*
>
> *"IOM Recommendation 4–6. VA should determine the feasibility of compensating for loss of quality of life by developing a tool for measuring quality of life validly and reliably in the veteran population, conducting research on the extent to which the Rating Schedule already accounts for loss in quality of life, and if it does not, developing a procedure for evaluating and rating loss of quality of life of veterans with disabilities."*

The effort to redefine the conditions for which disability compensation is appropriate should be standards-based (ICD, DSM, SNOMED–CT, LOINC) as described above. Text-mining and natural language processing methods (see references for Phase II, Step 3 below) could be used to determine which coded terms are currently used in disability determinations through review of the thousands of existing electronic disability-related VistA and CAPRI records, and from samples of paper records converted by OCR (if of adequate quality) or alternatively by direct typing of samples of old records into electronic format. This review, coupled with the effort to extend disability criteria as recommended by the IOM Report, could result in computer-processable "criteria table" definitions (see references 7–10 below for this step) for each disability condition that would maximize the objective representations of each condition (while still retaining free text if necessary to describe the aspects of human judgment required in each determination). As previously recommended, the list of document types and procedures relevant to determination of each disability category, as well as the orders required to carry out the procedures in VistA, could be added to an expanded revision of CAPRI.

A key component of redefining the conditions listed in CFR 38 Part 4 would be to include conditions that are well documented now that were not originally in the Codes, such as Post Traumatic Stress Disorder. Another important aspect would be to allow for coding for future disabilities that are clearly related to active service but which do not fit well into the existing code of disabilities at the time. Such "not

elsewhere classified" cases should be very carefully described in detail, and periodically reviewed (see Phase III, Step 3 below).

Once the above representation scheme for each disability condition was in place, an expert system using the "criteria table" approach could be developed to assist VBA raters in determining the completion status of each disability determination, and added to a more advanced version of the previously mentioned dashboard system. The AI–RHEUM expert diagnostic system (references #7–10 below for this step), developed initially at the University of Missouri at Columbia and at Rutgers University, and subsequently at the U.S. National Library of Medicine (NLM), might be used as a starting point for the proposed VHA/VBA expert system, because it uses "criterion tables" for diagnosis, which may fit well with a reformulated version of disability definitions in CFR 38 Part 4.

Two of the original developers of that system are currently at NLM—Donald A.B. Lindberg, MD, is the Director of the NLM, and Lawrence C. Kingsland III, PhD, is a computer scientist at the Lister Hill Center within NLM.

References for Phase II, Step 2:

1. *Duda RO, Shortliffe EH. Expert Systems Research. Science. 1983 Apr 15; 220(4594):261—268.*
2. *Miller RA, Pople HE Jr, Myers JD. INTERNIST1, An Experimental Computer-based Diagnostic Consultant for General Internal Medicine. N Engl J Med. 1982; 307:46876.*
3. *Bankowitz RA, McNeil MA, Challinor SM, Parker RC, Kapoor WN, Miller RA. A computer-assisted medical diagnostic consultation service: implementation and prospective evaluation of a prototype. Ann Intern Med. 1989; 110:82432.*
4. *Miller RA. Medical diagnostic decision support systems—past, present, and future: a threaded bibliography and brief commentary. J Am Med Inform Assoc. 1994;1(1):8–27.*
5. *Aliferis CF, Miller RA. On the heuristic nature of medical decision-support systems. Meth Inform Med. 1995 Mar;34(1–2):5–14.*
6. *Tom Mitchell. Machine Learning, McGraw-Hill: New York, NY. 1997.*
7. *Kulikowski CA. Expert medical consultation systems. J Med Syst. 1983 Jun;7(3):229–34.*
8. *Kingsland LC 3rd, Lindberg DA, Sharp GC. Anatomy of a knowledge-based consultant system: AI/RHEUM. MD Comput. 1986 Sep-Oct;3(5):18–26.*
9. *Porter JF, Kingsland LC 3rd, Lindberg DA, Shah I, Benge JM, Hazelwood SE, Kay DR, Homma M, Akizuki M, Takano M, et al. The AI/RHEUM knowledge-based computer consultant system in rheumatology. Performance in the diagnosis of 59 connective tissue disease patients from Japan. Arthritis Rheum. 1988 Feb;31(2):219–26.*
10. *Bernelot Moens HJ. Validation of the AI/RHEUM knowledge base with data from consecutive rheumatological outpatients. Methods Inf Med. 1992 Sep;31(3):175–81.*

Phase II, Step 3: Develop the ability to recognize, in clinical documents, terms that match findings or diagnoses of relevance to VBA disability determination.

An important "expert system" technique relevant to clinical informatics is natural language text processing [see references at end of this step]. Using a target vocabulary of defined clinical terms or concepts, such as provided by the U.S. National Library of Medicine's Unified Medical Language System Metathesaurus, or by the SNOMED–CT terminology system officially endorsed by the U.S. Government (which is a subcomponent of UMLS), such programs can scan a "free text" document, such as a clinical note, and identify which of the target concepts are present in the document [references 1–4]. The utility of such an approach for VBA disability determination has already been demonstrated by a pilot project to identify spinal-injury-related findings from free text disability exam records, and to correlate those findings with an electronic representation of the criteria used by VBA to determine disability [reference 5].

Ad hoc or heuristic approaches can combine manual techniques with semi-automated approaches to characterize clinical domains or conditions [references 6–7]. Such approaches have been used to derive a standardized vocabulary for patients' problem lists from a large set of examples in free text [reference 6], and to attempt to convert information stored in disparate DoD and VHA clinical record systems from one representation format to the other [reference 7].

Once disability-relevant terms can be abstracted from clinical documents with adequate reliability, it will be possible to combine such lists with the diagnostic approaches mentioned in Phase II, Step 2, to be able to suggest which disabilities that

a Veteran (or possibly even an active servicemember prior to discharge from the service) might qualify and be screened for.

References for Phase II, Step 3:

1. *Uzuner O, Goldstein I, Luo Y, Kohane I. Patient Smoking Status from Medical Discharge Records. J Am Med Inform Assoc. 2008; 15: 14–24.*
2. *Chen ES, Hripcsak G, Xu H, Markatou M, Friedman C. Automated Acquisition of Disease—Drug Knowledge from Biomedical and Clinical Documents: An Initial Study. J. Am. Med. Inform. Assoc. 2008;15(1):87–98. PrePrint published January 1, 2008; doi:10.1197/jamia.M2401*
3. *Friedman C, Shagina L, Lussier Y, Hripcsak G. Automated Encoding of Clinical Documents Based on Natural Language Processing. J. Am. Med. Inform. Assoc. 2004;11(5):392–402.*
4. *Denny JC, Smithers JD, Miller RA, Spickard A III. "Understanding" Medical School Curriculum Content Using KnowledgeMap. J. Am. Med. Inform. Assoc. 2003;10(4):351–362. PrePrint published July 1, 2003*
5. *Brown SH, Speroff T, Fielstein EM, Bauer BA, Wahner-Roedler DL, Greevy R, Elkin PL. eQuality: Electronic quality assessment from narrative clinical reports. Mayo Clin Proc. 2006; 81(11):1472–1481.*
6. *Brown S, Miller RA, Camp H, Giuse D, Walker H. Empirical Derivation of an Electronic Clinically Useful Problem Statement System. Ann Intern Med. 1999; 131(2):117–126.*
7. *Bouhaddou O, Warnekar P, Parrish F, Do N, Mandel J, Kilbourne J, Lincoln MJ. Exchange of Computable Patient Data Between the Department of Veterans Affairs (VA) and the Department of Defense (DoD): Terminology Standards Strategy. J Am Med Inform Assoc. e-published Dec 20, 2007 doi:10.1197/jamia.M2498*

PHASE THREE—CREATE A QUALITY FEEDBACK PROCESS TO ENHANCE AND EVOLVE THE DISABILITY RATING PROCESS OVER TIME

Phase III, Step 1: Using the disability determination tracking system described in Phase I, Step 6 and in Phase II, Step 1, develop progressively more sophisticated summary statistics that identify the following quality tracking metrics.

Proposed quality tracking metrics include:

a. The time required from initial application submission by a Veteran to completion of disability status determination by VBA.
   1. Subset by disability type (of the 700 conditions in CFR 38 Part 4)
   2. Subset by VBA Disability Office at local and regional levels
   3. Subset by steps required from start to end, to find "logjams" to work on

b. Use the data to determine which VBA raters fall outside the norms for the region or the Nation in terms of time to resolution of each Veteran's claim, consistency of VBA ratings, rate of responding to alerts and reminders, etc. These data should be used to help provide better follow-up training and instruction to VBA employees who require it, and if that is not effective, to find positions in VA for which the employee is better suited.

c. Use the data to review and refine the list of the core set of documents and steps required to determine each category of disability, over time. For example, at some time in the past, CT scans and MRI scans became more definitive and useful than plain x-rays for certain types of disability determination.

d. Consistency of assignment of disability category, percent disability, and awards for disability, for Veterans with similar sets of findings.

Phase III, Step 2: Progressively refine the ability of natural language processing approaches to extracting disability-related information from free text records, and apply it to both DoD and VHA records to help screen for Veterans who may qualify for disabilities.

This is somewhat self-explanatory, and represents time-wise refinement of Phase II

Phase III, Step 3: Track disabilities that do not fit well into the existing disability code (see Phase II, Step 2 above), and based on prevalence (a) notify DoD and VA of their existence, and criteria for diagnosing them, and (b) once well-established, modify by amendment CFR 38 Part 4 to include the new categories.

Just as the medical profession tracks and defines a small number of new diagnoses annually (notable examples include Legionnaire's disease in 1976–77, AIDS in the early eighties, and Lyme Disease—which had been described and forgotten in the early 1900s, but re-emerged in an outbreak that started in Connecticut in the late seventies), there are new service-related disability conditions that will continue to emerge, such as Agent Orange exposure from the Vietnam War era, Gulf War syndrome from the Gulf War in the early nineties, and closed head injury brain trauma in the current Gulf War. It is important to have categories that allow assignment of disabilities at appropriate levels to Veterans even when their disorders do not fit neatly into existing CFR 38 Part 4 codes. It is equally important to encode the findings of such Veterans with "in-between-the-codes" disabilities in standard descriptive terminology so that such cases can be monitored at the national level, and when new patterns emerge, they can be further studied, categorized, and given new diagnostic labels.

Development of new diagnostic labels for disabilities in Veterans has a number of ramifications. First, at the pragmatic level, definitions of the new conditions must be developed in the then-current electronic format used system-wide by the VHA and VBA, with appropriately coded standardized criteria and steps for diagnosis (consistent with Phase I and Phase II commentary above). Second, once such syndromes are characterized, if the conflict in which they arose is still ongoing, DoD personnel should be made aware of how to diagnose the condition in its early stages, so that hopefully the cause(s) can be determined, and preventive measures developed, whenever possible, within DoD, to lessen the occurrence of the condition during active service. Finally, once the condition has a formal definition, all VHA and VBA should be trained on how to detect and characterize the condition in a standard manner.

Phase III, Step 4: The software and underlying medical knowledge underlying the VHA and VBA rating systems described in this document should be periodically reviewed with end-users and by outside experts for continuous quality-related improvements.

Question 2: Can VBA claims be electronically prioritized so that the most obvious or easiest to decide claims can be adjudicated more quickly?

Response: Yes, this was detailed in my answer to Question 1. Please refer to Phase II, Step 1 above.

To recapitulate what was said above:

Phase II, Step 1: Design, build, and implement, on top of the new VBA electronic tracking system, a rating system that enables claims to be electronically prioritized so the that most obvious or easiest to decide claims can be adjudicated more quickly.

Once the automated tracking system is in place and running smoothly in pilot sites, a team of system designers, which should include computer-interface design experts, and sociotechnical implementation experts, should obtain input from both expert disability raters (i.e., long-term VBA employees) and from the most experienced and capable users of the new electronic system. The collective wisdom of the group should focus on the question of how to determine, at any given time, which disability claim records are the most important to process rapidly, and which records are easiest to process (i.e., require minimal effort to resolve rapidly). The result of these deliberations should be used to design and test a system that can do such prioritization, to point out to VBA reviewers at each site what their priorities should be. Ongoing validation of such a system will be required, with frequent feedback from VBA end users.

Question 3: In your testimony, you mentioned a "quality feedback loop." How can technology enhance the VA's efforts at monitoring quality in its claims processing?

Response: In my answer to Question 1 above, items under "Phase III" all fall into the quality feedback category, and comprise a complete response to Question 3.

Question 4: Can you further comment on the diagnostic system developed at the U.S. National Library of Medicine as to how it could be a starting point for VA disability claims?

Response: This was discussed in the response to Question 1, under Phase II, Step 2. Lawrence (Larry) C. Kingsland, III, PhD, would be the most appropriate person to contact at NLM (301–496–9300), as he has a long history of developing and evolving criterion-based diagnostic systems.

To recapitulate:

Phase II, Step 2: (excerpt)

Once the above representation scheme for each disability condition was in place, an expert system using the "criteria table" approach could be developed to assist VBA raters in determining the completion status of each disability determination, and added to a more advanced version of the previously mentioned dashboard system. The AI–RHEUM expert diagnostic system (references #7–10 for this step), developed initially at the University of Missouri at Columbia and at Rutgers University, and subsequently at the U.S. National Library of Medicine (NLM), might be used as a starting point for the proposed VHA/VBA expert system, because it uses "criterion tables" for diagnosis, which may fit well with a reformulated version of disability definitions in CFR 38 Part 4. Two of the original developers of that system are currently at NLM—Donald A.B. Lindberg, MD, is the Director of the NLM, and Lawrence C. Kingsland III, PhD, is a computer scientist at the Lister Hill Center within NLM.

Committee on Veterans' Affairs
Subcommittee on Disability Assistance and Memorial Affairs
Washington, DC.
February 4, 2008

Marjie Shahani, M.D.
QTC Management, Inc.
1350 Valley Vista Dr.
Diamond Bar, CA 91765

Dear Dr. Shahani:

In reference to our Subcommittee hearing on the Use of Artificial Intelligence to Improve the VA Claims Processing System on January 29, 2008, I would appreciate it if you could answer the enclosed hearing questions by the close of business on March 4, 2008.

In an effort to reduce printing costs, the Committee on Veterans' Affairs, in cooperation with the Joint Committee on Printing, is implementing some formatting changes for materials for all full committee and subcommittee hearings. Therefore, it would be appreciated if you could provide your answers consecutively on letter size paper, single-spaced. In addition, please restate the question in its entirety before the answer.

Due to the delay in receiving mail, please provide your response to Ms. Orfa Torres by fax at (202) 225–2034. If you have any questions, please call (202) 225–3608.

Sincerely,

JOHN J. HALL
Chairman

QTC
Diamond Bar, CA.
March 3, 2008

Ms. Orfa Torres
335 Cannon House Office Building
Washington, DC 20515

RE: Questions on Artificial Intelligence to Improve the VA Claims Processing System

Ms. Torres:

Attached is our response to the questions submitted by the Honorable John J. Hall regarding the Hearing on the use of artificial intelligence to improve the VA claims processing system. Please do not hesitate to contact me for additional information.

Sincerely,

Dr. Marjie Shahani
Vice President

Enclosure

Response to Questions from Hon. John J. Hall
Chairman, Subcommittee on Disability Assistance and Memorial Affairs
U.S. House of Representatives

Hearing on the Use of Artificial Intelligence to Improve VA Claims Processing System held on January 29, 2008

From: Marjie Shahani, MD
Senior Vice President, QTC Medical Service, Inc.

Question 1: The Evidence Organizer sounds like it could make some impact on increasing the number of cases a day a rater could rate. A 33% increase sounds good, but not great. Is there any way we could be doubling that figure?

Response: Yes, the Evidence Organizer can make such an impact.

Increasing the realized productivity of rating specialists to rate a case is dependent on multiple factors.

First, it is critically important to move away from paper-based claims and supporting evidence. This would involve obtaining and converting claims and supporting medical evidence to a digital, searchable format. It is our understanding, from discussions with retired rating specialists and working with the VA, that the majority of their time is spent searching and weighing the medical evidence available on file. The Evidence Organizer will assist in accomplishing these tasks for the rating specialists thereby:

- Reducing the time the rating specialist spends reviewing and identifying the pertinent medical records for the individual issues claimed
- Reducing the time the rating specialist spends correlating the medical evidence to the diagnostic codes

In addition, the Evidence Organizer can be linked to the current VA rating specialist's tool, RBA 2000, allowing flexibility of transferring information from the Evidence Organizer directly to the rating document.

The Evidence Organizer will enhance the delivery of a more timely, standardized and accurate rating decision. Similar to other rule-based systems, utilization of the Evidence Organizer provides iterative improvements through fine-tuning of the rules and training the system thus producing increasing improvement of productivity and accuracy with use and time.

Question 2: If a computer system could be matching key words as you described, would it still be necessary to generate a narrative report that needed to be read? Wouldn't it just be easier to avoid that step and let the computer match the criteria from the rating schedule to the findings in the exam template?

Response: The Evidence Organizer does not generate a narrative report. It is a decision support system designed to enhance the efficiency of the Rating Veteran Service Representative (RVSR) or rating specialist by directly matching the medical evidence to criteria contained in the rating schedule.

The Protocol Software application tool built by QTC and utilized by the examining physicians to perform the examinations according to VA AMIE worksheet requirements generates a narrative report. This is a separate tool all together.

Question 3: To take the concept a step further. If an entire record is scanned into a computer using a high speed scanner and indexed at the same time—and that could be hundreds of pages in about half an hour—once that index was completed and key words were matched, then couldn't some sort of rule-based expert system as described by Doctors Mitchell and Miller apply the VA Rating Schedule and calculate a rating?

Response: Yes. A rating decision could be calculated by a rule-based expert system; however additional information would need to be added into the computerized system beyond the evidence and the rating schedule.

The Rating Schedule and the Code of Federal Regulations embody the laws and procedures that apply to a properly evaluated disability. Based on our knowledge in working with the VA, these are not the only guides utilized by an RVSR in determining entitlement to benefits and selecting a percentage evaluation when certain disability criteria are met.

Additional information that would need to be added to the expert system would include:

- Policy statements
- Procedure statements

- Administrative decisions
- Secretaries' decisions
- Court of Appeals for Veterans Claims (CAVC) precedents, and
- Other legal precedents governing Department of Veterans Affairs (VA)

Incorporating all these into the rule-based expert system will allow for the software application to provide a recommended rating.

The rating results generated by the expert system will be as accurate as the rules configured in it and the completeness of the data (files) accessible to it in digital searchable form.

Question 4: We've often heard that claims have become more complex with over eight conditions per claim instead of just one or two. Could an expert system rate all of those conditions given that the claim was already in a "ready to rate" format such as the one described by Mr. Hunter? How long would it take?

Response: Yes. A properly built and fine-tuned rule-based expert system could rate multiple conditions in a prompt manner. A specific timeframe to produce the completed decision would be dependent on the complexity of the algorithms and accuracy of the rules configured in the expert system and the infrastructure used to host the expert system; however, we anticipate this could be completed in minutes since we believe that the algorithms can be built in linear complexity.

Committee on Veterans' Affairs
Subcommittee on Disability Assistance and Memorial Affairs
Washington, DC.
February 4, 2008

Mr. Ned Hunter
Stratizon Corporation
5425 Peachtree Way
Norcross, GA 30092

Dear Mr. Hunter:

In reference to our Subcommittee hearing on the Use of Artificial Intelligence to Improve the VA Claims Processing System on January 29, 2008, I would appreciate it if you could answer the enclosed hearing questions by the close of business on March 4, 2008.

In an effort to reduce printing costs, the Committee on Veterans' Affairs, in cooperation with the Joint Committee on Printing, is implementing some formatting changes for materials for all Full Committee and Subcommittee hearings. Therefore, it would be appreciated if you could provide your answers consecutively on letter size paper, single-spaced. In addition, please restate the question in its entirety before the answer.

Due to the delay in receiving mail, please provide your response to Ms. Orfa Torres by fax at (202) 225–2034. If you have any questions, please call (202) 225–3608.

Sincerely,

JOHN J. HALL
Chairman

Committee on Veterans' Affairs
Subcommittee on Disability Assistance and Memorial Affairs
March 6, 2008

"The Use of Artificial Intelligence to Improve the VA's Claims Processing System"

Ned M. Hunter, President and Chief Executive Officer, Stratizon Corporation, Atlanta, Georgia

Question 1: Can you tell me more about where you are at with the Virginia pilot project?

Response: The pilot is stalled due to funding. The application is built and ready to go.

Question 2: Are other states or agencies using TurboVet and what have been their results?

Response: No. Eight other states have expressed interest since presenting at NASDVA.

Question 3: If VA was no longer relying on paper records and was primarily using an electronic system, how long do you think it would take them to process a claim?

Response: It depends the integration of processes, both business and technical. We believe at least a 60% improvement in process cycle efficiency could be achieved.

Committee on Veterans' Affairs
Subcommittee on Disability Assistance and Memorial Affairs
Washington, DC.
February 4, 2008

Mr. Gary Christopherson
Strategic Management and Performance
4327 Clagett Road
University Park, MD 20782

Dear Mr. Christopherson:

In reference to our Subcommittee hearing on the Use of Artificial Intelligence to Improve the VA Claims Processing System on January 29, 2008, I would appreciate it if you could answer the enclosed hearing questions by the close of business on March 4, 2008.

In an effort to reduce printing costs, the Committee on Veterans' Affairs, in cooperation with the Joint Committee on Printing, is implementing some formatting changes for materials for all full committee and subcommittee hearings. Therefore, it would be appreciated if you could provide your answers consecutively on letter size paper, single-spaced. In addition, please restate the question in its entirety before the answer.

Due to the delay in receiving mail, please provide your response to Ms. Orfa Torres by fax at (202) 225–2034. If you have any questions, please call (202) 225–3608.

Sincerely,

JOHN J. HALL
Chairman

Hearing on Use of Artificial Intelligence to Improve the VA's Claims Processing System
January 29, 2008 QFR Responses of Gary A. Christopherson
Former Senior Advisor the Under Secretary for Health and Chief Information Officer
Veterans Health Administration, Department of Veterans Affairs
Former Principal Deputy Assistant Secretary for Health Affairs, Department of Defense

Question 1: In your written testimony you state that you helped improve the VistA health information system. Can you emphasize your involvement? How is VistA a model and how can VBA implement this model or share in it?

Response: Starting in the year 2000, I served as the Chief Information Officer for the Veterans Health Administration. When I arrived, the current plan by the previous CIO was to abandon VistA and move to a commercial product. After a thorough review of VistA from both the health care and information technology perspectives, I recommended that we build a new generation of VistA—called Health*e*Vet VistA—from the foundation of the existing VistA. That recommendation was unanimously approved by VHA, VA and OMB and was funded at a rate of an additional $125 million/year. That new development began in 2001.

Based on internal reviews by VHA and the staff nationwide and on external reviews by a number of health care experts, VistA has been applauded as probably the most functional electronic health record system in the world. With next generation Health*e*Vet VistA, this functionality would be substantially enhanced and built on the latest information technology.

VBA is using and could use it more effectively by cutting and pasting the health care information into the VBA applications. With a redesigned VBA application, the data could be directly imported without retyping or cutting/pasting. Importing the data greatly speeds up the search for the needed information, the application of that data to the VBA decisionmaking process, and the actual decision and any subsequent updates.

The VistA application itself is a model for how one should construct the future VBA decisionmaking environment where the data is available electronically, in standard formats, coupled with decision support tools (e.g. artificial intelligence), and operating in real time supporting real time decisionmaking.

Question 2: You mention in your testimony that claims can be processed in real time and rated in a single day. Given your background with VA and your knowledge of its capabilities, what does VBA need so it can capitalize on artificial intelligent technology and reach that real time goal?

Response: First, the veteran should have the option of entering all the information they have online so that it is available to the VBA as soon as the application is submitted. Whatever medical or other documentation is available from other than DoD or VA can be submitted at attachments in standard formats. Whatever medical or other documentation is available from DoD or VA electronically should be available as it is generated. This is the case with VHA information today. It is partly true for DoD information today. As more of this data is digital and standardized, the power and speed of decision support tools increases.

If more information is needed, a temporary rating could be issued based on what has been submitted and a signature by the veteran. If more information is needed, that should be able to be obtained within 30 days and allow a "permanent" decision to be made within 30 days. For either, the appropriate payment should be started within 30 days of the application. Decision support tools (including artificial intelligence can easily support this model. This can be done today and can be done even better in the near future with enabling technology.

Question 3: We have heard a lot today about what the technology can do to improve timeliness, accuracy, and consistency far beyond what people are capable of doing. So, what role does that leave for the Regional Office employees? If we free up their time from processing papers would they be able to spend more time advising veterans and their families on their claim and other available benefits or do you think implementing more technology will result in a loss of jobs?

Response: Technology is unlikely to reduce the need for Regional Office employees any time in the near future. What it does do is allow them to be involved in more important work in support of the veteran and VA.

First, there is always going to be the need for human intervention deal with more complex claims and where the decision support has limits (lack of digitized and standardized data; claims that fall outside current decision rules). Second, veterans need a partner to assist them prior to making a claim, when making a claim and on an ongoing basis as their situation changes. Third, veterans need people to "meet and greet" them at the door as a way to welcome them to a potential benefit based on their service to the Nation. Fourth, employees could become case managers where they actively and proactively engage with the veteran to make sure what needs to happen with respect to benefits does happen. This could reach further to helping coordinate, working with the veteran, VA programs with non-VA programs.

There is no good reason why any existing employee should lose his/her job. There is all the additional valuable work described above. Further, whatever loss of jobs does occur would likely occur over a long time period and could likely be handled through normal attrition.

Committee on Veterans' Affairs
Subcommittee on Disability Assistance and Memorial Affairs
Washington, DC.
February 4, 2008

Hon. James B. Peake, M.D.
Secretary
U.S. Department of Veterans Affairs
810 Vermont Avenue, NW
Washington, DC 20420

Dear Secretary Peake:

In reference to our Subcommittee hearing on the Use of Artificial Intelligence to Improve the VA Claims Processing System on January 29, 2008, I would appreciate it if Mr. Stephen Warren and Ms. Kim Graves could answer the enclosed hearing questions by the close of business on March 4, 2008.

In an effort to reduce printing costs, the Committee on Veterans' Affairs, in cooperation with the Joint Committee on Printing, is implementing some formatting changes for materials for all full committee and subcommittee hearings. Therefore, it would be appreciated if you could provide your answers consecutively on letter size paper, single-spaced. In addition, please restate the question in its entirety before the answer.

Due to the delay in receiving mail, please provide your response to Ms. Orfa Torres by fax at (202) 225–2034. If you have any questions, please call (202) 225–3608.

Sincerely,

JOHN J. HALL
Chairman

Questions for the Record
The Honorable John J. Hall, Chairman
House Veterans' Affairs Committee
Subcommittee on Disability Assistance and Memorial Affairs
January 29, 2008

Use of Artificial Intelligence to Improve the VA Claims Processing System

Mr. Stephen Warren

Question 1: In your statement you described a Request for Information that industry responded to that would help VA leverage decision support technologies, so what was the outcome of that process? How are you going to use that information?

Response: Industry responses to the request for information (RFI) revealed a variety of tools and services available on the open market, which may assist the Department of Veterans Affairs (VA) in developing a business model that is less reliant on paper. During the vendor presentations stage of the RFI, it became evident that the paperless delivery of veterans benefits initiative has many interrelated elements, requiring a significant level of planning and integration to ensure successful implementation. To that end, VA has decided that the most prudent course of action is to engage the services of a lead systems integrator (LSI). The role of the LSI will be to work with VA to document business requirements, assess the current and planned information technology landscape, and develop an overarching program plan to implement the desired end-state. The information gathered during the RFI process will be provided to the LSI for consideration, as they assist VA in developing its implementation strategy.

Question 2: VistA has helped bring the Veterans Health Administration to the cutting edge of healthcare in America. No other system has as dynamic an electronic system as VHA. So, why doesn't VBA benefit from it in the same way? Why are the Regional Offices taking an electronic medical record, printing it, and flagging it with post-its and rubber bands?

Response: The Veterans Benefit Administration (VBA) does benefit from the advances in the Veterans Health Information Systems and Technology Architecture (VistA). Through the compensation and pension records interchange (CAPRI) interface, VBA personnel may request medical examinations necessary for the evaluation of disabilities claim. In addition, VBA personnel may search and download information contained in the VistA system, relevant to the veteran's claimed conditions. In

our desired end-state, VBA employees will be able to capture this information electronically into the veteran's "e-File", for use in administering compensation benefits. This type of electronic information sharing and claims processing is a cornerstone of the paperless delivery of veterans benefits initiative.

Question 3: During the hearing you were unaware of the disbanding of the Office of Seamless Transition. Why has that office disappeared while there are still so many problems that transitioning servicemembers and their families face? How is VBA informing veterans that they can file a claim online?

Response: In October 2007, the Veterans Health Administration (VHA) reorganized the Office of Seamless Transition, in order to better meet the needs of severely wounded servicemembers and veterans. The clinical components of the office were realigned under the newly established Care Management and Social Work Service, whose mission is to address the needs of wounded and ill servicemembers. The employees, who were members of the Office of Seamless Transition, are a part of the new Care Management and Social Work Service.

The transition assistance and case management that VA provides to Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF) servicemembers, families and veterans have not changed as a result of the reorganization of the Office of Seamless Transition. It is VA policy that all claims for OEF/OIF veterans receive priority processing. The severely injured OEF/OIF claims are case managed, whether the seriously injured servicemember is transitioning from military to civilian life or remains on active duty. There is no higher priority for any VA employee, than ensuring the needs of those seriously injured in OEF/OIF are met in a timely and appropriate manner.

VA uses a variety of methods to inform veterans that they can file a claim online. A few examples include face-to-face transition assistance program briefings; printed materials, such as pamphlets and brochures; and through our Web site under the heading "Apply Online."

Question 4: Can you provided a more detailed report on the results of the RFI mentioned during the hearing? What was the industry response and what will VBA do with that information?

Response: The RFI yielded 19 submissions from industry. These submissions covered such areas as business-rules engines, integration services, decision-support applications, and independent verification and validation services. Based on the initial submissions, VA requested that 11 vendors prepare a more targeted oral presentation. These 11 vendors covered the spectrum of the categories described above. During the course of the presentations, it became evident that the paperless delivery of veterans benefits initiative has many interrelated elements, requiring a significant level of planning and integration to ensure successful implementation. To that end, VA has decided that the most prudent course of action is to engage the services of a lead LSI. The role of the LSI will be to work with VBA and the Office of Information and Technology (OIT) to document business requirements, assess the current and planned information technology landscape, and develop an overarching program plan to implement the desired end-state. The information gathered during the RFI process will be provided to the LSI for consideration, as they assist us in developing our implementation strategy.

Question 5: Please provide a copy of the IBM Report requested during the hearing.

Response: IBM will deliver its final report and provide executive briefings to VBA in March 2008. A copy of the final report will then be provided to the Committee.

Ms. Kim Graves

Question 6: During the hearing, you mentioned an end-to-end claims process that will be paperless and computable, which based on the testimonies from the second panel is very realistic and should be the norm already. So, when will we see this new veteran's e-file and how long will this new system take to process a claim? Will it be more accurate and consistent?

Response: The end-to-end claims process described in the testimony is our desired end-state vision for claims processing. We have already engaged in two pilot efforts which have demonstrated this type of "paperless" claims process, using an "e-File", is feasible. The results of our RFI solicitation, as well as the presentations of the hearing panelists, provide for a number of potential opportunities to enhance the claims process. All potential solutions will be considered by the LSI as we de-

velop our overarching strategy to reach the desired end-state. In addition, realistic performance metrics will be developed so that we may assess our progress in moving forward with this initiative. We fully expect to see improvements in the claims process as we move toward this end-state.

Question 7: What is the problem with accepting an electronic signature?

Response: VA agrees the claim process should be modernized to enable claimants to submit claims electronically and conduct other business with VA electronically, similar to the electronic business transactions that have become the mainstay of modern America. We are committed to this modernization as a high priority and are assessing the changes that are necessary to achieve this goal.

Question 8: Why did it take VBA a year to rate and compensate Mr. Cleveland?

Response: This information was provided to the *Chairman only* due to the personally identifying information contained in the response.

Question 9: What can Congress do or what do we need to do to help VA to improve and use technology to process disability claims?

Response: We believe we have identified a prudent course of action in seeking to bring on a LSI to assist us in developing and implementing our long-term vision of Paperless Delivery of Veterans Benefits. This strategy is consistent with the Social Security Administration's "eDib" initiative. As part of this process, we will more clearly define the end-state; we will articulate achievable milestones for implementation of capabilities and improved processes; and we will develop a long-term funding and acquisition strategy. Congressional support of our overall plan will be critical to our success.